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BLUE JAY

ecember 1982

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ROSE POGONIA — AN ORCHID NEW TO MANITOBA

ETER TAYLOR, P.O. Box 597, Pinawa, Manitoba. R0E 1L0

Several eastern North American chids approach their western limits of stribution in the boreal forest of utheastern Manitoba.[6 7] The Rose gonia (*Pogonia ophioglossoides* (L.) r.) is a showy pink-flowered species hich has apparently not been reported eviously from Manitoba, but has been corded as far northwest as the Rainy ver district of northwestern Ontario, d adjacent northeastern innesota.[1 8 5] This prompted me to ok for this species while exploring me bogs in southeastern Manitoba.

On 1 August 1982 I visited an open g within the Bog River wetland com- ex, approximatley 6 km southeast of ver Hills, Manitoba (50° 2' N, 95° 57'), and was delighted to find 15 Rose gonia plants in bloom. These includ- one group of 10 plants within an area about one square metre. All were owing in an extensive stand of sedges *arex* spp.) and small birch shrubs *etula ·glandulifera*), with scattered eds (*Phragmites communis*) and all tamarack trees (*Larix laricina*), d numerous Pitcher Plants *arracenia purpurea*).

All the Pogonia plants were growing ng a 300 m stretch of a north - south tline, which is lightly used by snow- biles in winter. The sedges were orter, and the ground was wetter, on trail than off it. Brief off-trail searches not reveal any more Pogonias. Case tes "[Rose Pogonia] usually grows the wettest parts of the bog, often on ating tufts of sedge. . . . If present at it is usually abundant. It spreads by ans of root shoots and forms dense lonies."[1]

No Pogonia specimens were collected, but satisfactory photographs of two blooms were obtained and accompany this article. Colour photographs and a detailed map of the locality have been deposited with the Manitoba Museum of Man and Nature, Winnipeg, and the herbarium of the Whiteshell Nuclear Research Establishment, Pinawa.

Two similarly coloured orchids occur in bogs in southeastern Manitoba: Arethusa, Dragon's Mouth or Swamp Pink (*Arethusa bulbosa*) and Calopogon or Grass Pink (*Calopogon pulchellus*).[3 4] Arethusa resembles Rose Pogonia, but has a much more slender leaf and less prominent floral bract; the bloom is a more purplish pink and lacks the fringing of the lip. Calopogon is readily distinguished by the "inverted" configuration of the bloom, with the narrow lip uppermost. It also normally has more than one flower per stem, whereas the Pogonia usually has only a single flower. Case notes "Arethusa, Rose Pogonia and Calopogon regularly occur together. Rarely indeed in northern Michigan or Wisconsin does one of these species occur without the other two; yet at times each does grow where the other two do not."[1] In southeastern Manitoba I have found Arethusa and Calopogon in partly open black spruce - tamarack bogs, including an area within 1 km of the Rose Pogonia locality. However, neither appears to be present where the Pogonias were found. Two other orchid species were found growing near the Pogonias: Hooded Ladies' Tresses (*Spiranthes romanzoffiana*) and White Bog Orchid (*Habenaria dilatata*).

Rose Pogonia near River Hills, Manitoba *Peter Taylor*

It is interesting that Arethusa occurs locally along a narrow band from southeastern Manitoba to northwestern Saskatchewan, while Calopogon and Rose Pogonia appear to reach their range limits in southeastern Manitoba.[2 4 3 6 7] The latter two orchids bloom later than Arethusa in southeastern Manitoba, and it may well be worth searching for them in appropriate habitats farther northwest, in July or early August.

Acknowledgement

I am grateful to Janet R. Dugle for teaching me to look at the ground occasionally while birding, and for helpful suggestions on this article.

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SENTINEL COLONIES OF DIAMOND-BACK LARVAE FOR EARLY SEASON DETECTION OF PARASITES

. G. PUTNAM (retired from) Agriculture Canada Research Station, 107 Science
rescent, Saskatoon, Saskatchewan. S7N 0X2

Of the 700,000-odd species of in- ects so far recognized by science ome suspect that there may be a illion or more), a great many make eir livings from original sources, for xample by sucking blood or plant ices, chewing hair, wool, or stored ood products, feeding on dung or arrion, chewing a wide variety of liage, collecting nectar and pollen, or oring in plant stems or tree trunks. But ose species that live by feeding on ther insects as parasites or predators umerically exceed those living by most ther principal means. There are ughly 100,000 species of the Order ymenoptera (bees and wasps) and of ese a very large number are parasitic predaceous on other insects. Diptera lies of certain families) are the other reat specialists in parasitism. Some arasitic species are so closely adapted and associated with their hosts that ey form an exclusive, integrated host- rasite complex. Bertha armyworm nd its principal parasite, a menopteran, seem to be an example such a complex.

The author's own interest in rasitism is a narrow one, stemming om his former concern with the amondback moth (an annual immi- ant into our latitudes) and its larvae *lutella xylostella* (L.) Lepidoptera: lutellidae), and the factors affecting its undance in our rapeseed, or as we y nowadays, our canola fields. rasitism turned out to be one of those ctors.[1] Two small hymenopterans ere involved, *Microplitis plutellae* ues., of the family Braçonidae, and *Diadegma insularis* (Cress.), family Ichneumonidae; you may have read about a few of the larger species of the latter. Adults of both species are too small to attract popular attention, so they have no common names. The adaptations of these parasites to the size and life cycle of the small host diamondback larva is close: one host supports one parasite larva to its maturity, and the emergence of the adult stages of the successive generations is concurrent. As the host larva matures, the parasite larva emerges (finishing off the host of course) and spins its own cocoon. *M. plutellae* forms a brown, oval cocoon about the size of a small grain of wheat. This adheres to whatever surface (leaf, stem, etc.) the host larva was on when the parasite emerged. *D. insularis* emerges and spins up inside the loosely woven cocoon that the host larva had intended (so to speak) to use for itself. Many of the pupae inside the cocoons of *M. plutellae* quickly transform to adults and emerge, and probably all those of *D. insularis* do so. They come out and fly in time to go to work on the closely following next generation of diamondback larvae. Next time diamondback larvae are abundant, sweep up a hundred or so and rear them in a cage. You will probably get not only diamondback pupae, followed by moths, but cocoons of both parasites, soon too followed by their adults.

The first generation of diamondback larvae is often confined, at the beginning of the season, to weed mustards such as flixweed, a winter annual, and volunteer canola. The larvae at this stage are often scarce, and yet a high percentage of them are parasitized. High percentage parasitism in a low population is not thought of as normal, so why this? It was suspected that the adult parasites, particularly *M. plutellae*, might be present and waiting when the first diamondbacks of the season hatched.

To investigate this, I developed a method suggested by the "sentinel chicken flock" idea.[3] This involves the periodic testing of blood samples from chickens in these flocks for the presence of antibodies developed in response to western equine encephalitis inoculated by the bites of mosquito carriers. In my adaptation, a hundred or so tiny diamondback larvae were counted out onto canola plants supported in a greenhouse pot. These "colonies" were then exposed in the open at ground level for three or four days, and retrieved and replaced. The retrieved colonies were isolated in cages, and incubated in a greenhouse for sufficient time for the diamondback larvae to mature and any parasites to emerge. All insect material was then identified and counted. Since the exposures were begun before any insect activity in the spring, the dates of first appearance in the field of the parasites could be known with a precision of three or four days.

Experiments using the technique described above were carried out during the period 1971-75 inclusive, at four stations in Saskatchewan: Saskatoon, Watson, Melfort, and Aylsham, totalling 13 station-years (not every station was used during each of the five years). Dates of arrival of immigrant diamondback moths were being watched for at the same time by other means. The technique is regarded as having worked reasonably well. Retention of host larvae was commonly about 60 per cent, except in cases of an early season frost that killed the plants. Chicken wire cages were adopted to protect th plants from hares at times when ther was no other succulent vegetation. Aft the presence of parasites was fir detected by means of the sentin colonies, colonies successively expos ed nearly always continued to sho parasitism.

As a generalization, *M. plutellae* wa commonly first detected during the latte half of May, and *D. insularis* during th first half of June. Percentage parasitis in the recovered insect material wa sometimes up to about 90 percent, bu varied widely and averaged about 5 percent. Larvae exposed in the colonie could become parasitized, particularl by *M. plutellae*, before naturally occu ring host larvae became available. Th evidence for the presence of *M* *plutellae* prior to that of naturally occu ring host larvae was therefore quit strong; their readiness would explain th high percentage parasitism in the fir collectible host larvae of the seaso Later, it was shown that *M. plutellae* ha adaptations, i.e. diapause in part each pupal generation, and cold hardi ness, that could permit it to overwinte locally, and that it in fact did so. Usually, but not invariably, *M. plutella* was detected before *D. insularis*; th latter has no known adaptations fo wintering in our climate. It is therefor thought to be an annual immigrant, bu this is not certainly known.

How do tiny wasp-like adult parasite home in on an isolated cluster o *Brassica* sp. plants carrying an infestation of host larvae? Are there so many o them that orientation and flight from considerable distance is not necessary Do they just drift along on the breez and bump into the plants more or les on the basis of random encounter? I something attracts them, even from short distance of a few m, is it the plant or the host larvae on the plants? O perhaps more logically, first the plants and then the larvae? Experiments have not been designed and performed to btain answers to these questions; there ight be ingenious persons out there ho could think of ways to do it. The pability of an insect to orient toward n attractant source can be very great, we have known for some time from e very general phenomenon of the action of male moths to a unique sex ttractant released by females of the me species.

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ider web *B. de Vries*

EDWARD ARNOLD, ENTHUSIASTIC OOLOGIST

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan, S7N 0J
and MARC J. BECHARD, Department of Biological Sciences, Marshall Universit
Huntington, West Virginia 25701

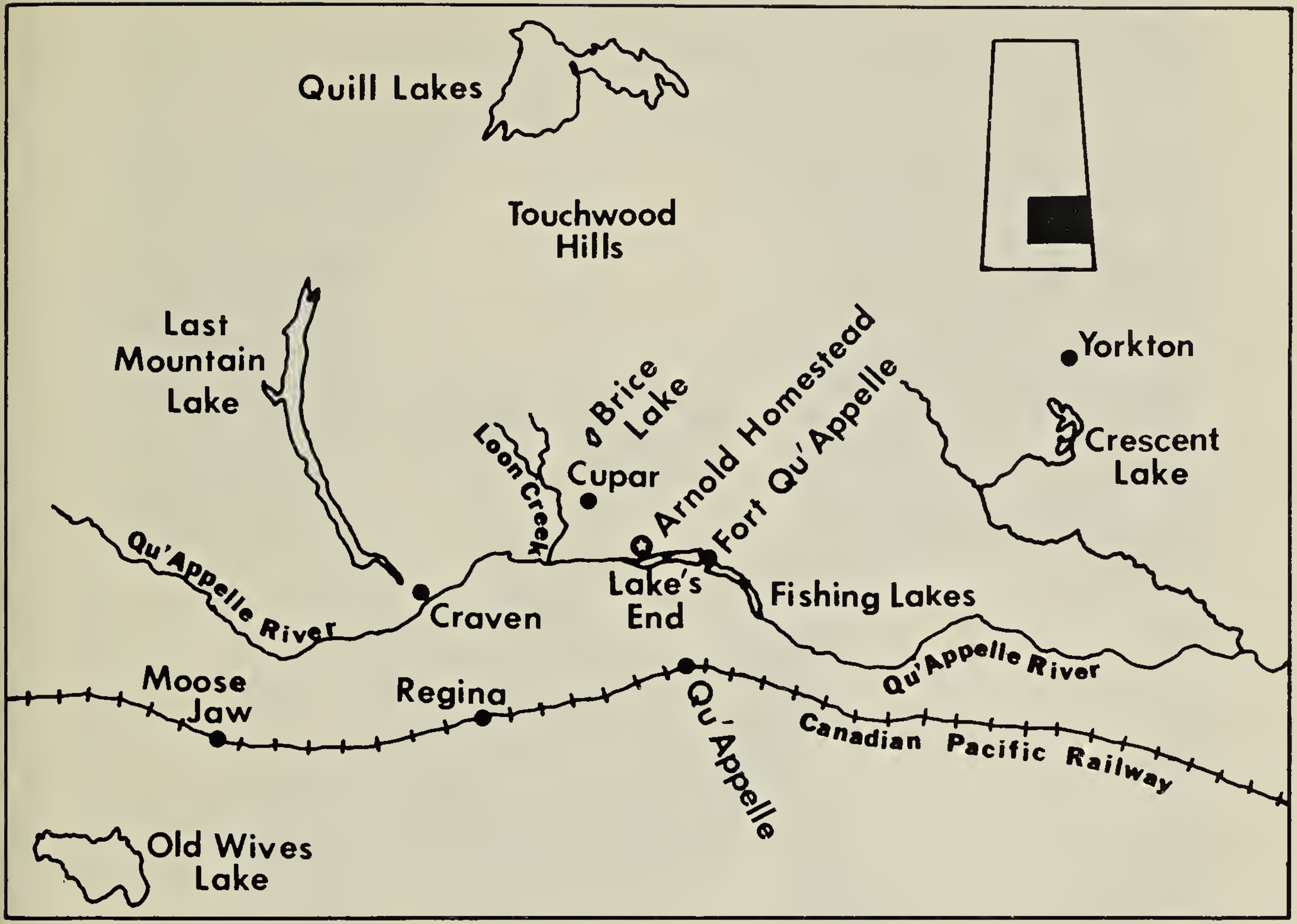
Edward Arnold was born 26 August 1864 in Kingston, Ontario, the son of George and Mary (White) Arnold. He was raised in Kingston and completed his education at Dominion Business College. In 1880, he began working for the Grand Trunk Railroad as a clerk and ticket agent.[16] The Grand Trunk transferred him to Detroit in 1886, then to Chicago, and finally in 1892 to Battle Creek, Michigan as Travelling Claims Agent for the Port Huron-Chicago line. Along with the job came a free rail pass. Described by business colleagues as a strongly motivated worker, Arnold was equally keen about his hobby. Beginning in 1894 and for the next 23 years, he used his vacations to collect bird eggs and skins throughout the United States and Canada. He began with a series of 10 annual trips to the Canadian West between 1894 and 1904. Lured by the description of the egg collector's paradise in the territory of Assiniboia in Walter Raine's *Birds Nesting in North-West Canada* and by the fact that his brother, William Henry Arnold, had homesteaded there in 1885, Arnold planned these trips soon after arriving in Battle Creek.[21] He soon amassed one of the largest collections of western North American bird eggs.

1894 Trip

Arnold's first trip to Assiniboia was planned for 1893, but heavy rail shipments because of the Chicago World's Fair forced him to postpone it until the following year. Serious about his new egg collecting hobby, he submitted an account of his observations to the *Nidiologist*.[2] Unfortunately the articles dealt only with his observation at a lak near Reaburn, Manitoba from 4 to June. Arnold claimed to have collect the second known set of Le Conte Sparrow eggs there; the first had be collected in the same area by G. F. Di pie and Walter Raine the previous yea Dippie questioned the set the next ye in the *Nidiologist*, pointing out the diff culty of correct identification witho collection of the female.[14] [15] Althoug Arnold's last account ended "to be co tinued," descriptions of trips we kno he made to Shoal Lake, northwest c Winnipeg (not to be confused with th town of Shoal Lake, west of Minnedosa with Raine and to Fort Qu'Appelle we never published. The next year, in th introduction to his 1895 account Arnol wrote about his "rare good luck" in 189 to have found 2 Goshawk nests, one c them along the trail between Qu'Appell and Fort Qu'Appelle.[3] Data in th Western Foundation of Vertebrat Zoology (WFVZ) show that Arnol stayed in Assiniboia well into June; h took a set of two fresh Ferruginou Hawk eggs from a nest 7 feet high in willow on 14 June 1894.

1895 Trip

Encouraged by his first year' success, Arnold's second trip west wa quite a production. In addition to hiring local guide, he brought two assistants t "help blow eggs, fill out data slips, an cook the necessary meals" as well as " tent, a complete camping outfit, goo gun, and lots of good provisions." The caught the train at Battle Creek on th morning of 25 May and arrived a Qu'Appelle station at 6 a.m. on 28 May

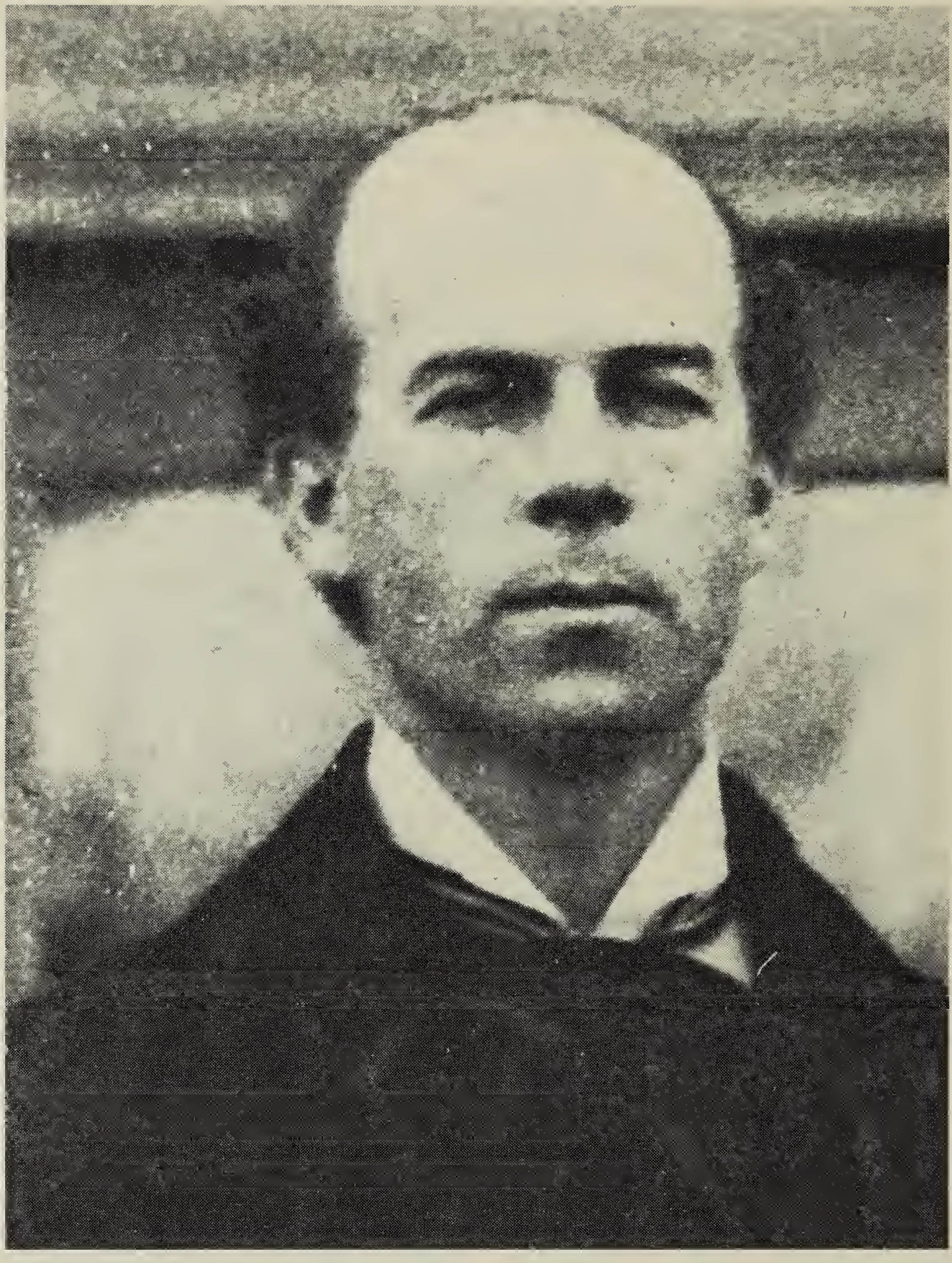


rnold birded for 2 hours before arding the stage coach at 8:30 a.m. its 3-hour trip to Fort Qu'Appelle. ere Arnold hired a buckboard to take em on the 4-hour trip to his brother's mestead in the valley just west of Pas-a Lake.

William Henry Arnold farmed the 9.48 acres not covered by marsh on e north half of Section 18, Township 1, Range 15, west of the Second eridian. The district was then known "Lakes End, Assiniboia," the locality a number of Arnold's egg labels. illiam, his wife, and four children lived an 18 x 30 ft log house 600 yards rth of Qu'Appelle River. The farm was mall ranching operation with 30 cattle d 8 horses kept within a 97-acre rail-nce enclosure. Only 3 acres were ltivated.

This time Arnold published notes on trip in four installments in the *logist.*[3] [4] Included was an important early note on Redhead parasitism in Canvasback nests, the first Saskatchewan nest of the Yellow Rail, and the second Saskatchewan nest of the Bufflehead. He also reported finding a Goshawk nest with two eggs, 8 feet from the ground in a willow, and two Long-eared Owl nests with three and five eggs each in coulees near his brother's house. Again, all four installments covered only the first few collecting days but mentioned 48 species, 21 of which were nesting records. All but two of these nests were probably valid; his nests of the Northern Shrike and Rough-legged Hawk were certainly errors of identification.

Arnold was visited by a schoolmate from Kingston who had hunted and trapped in Assiniboia for 15 years. His friend took him on a 2-day wagon trip to a lake at the base of Touchwood Hills, 30 mi to the northwest. On 5 June 1982, Kelly Wylie, Mary Houston, and the senior author attempted to trace Ar-



Edward Arnold, enlarged from a group photograph, A.O.U. meeting, Washington, D.C November 1895

nold's trip. The homestead site was easy to find. It is now only 100 yards from the north shore of Pasqua Lake, which extends farther west and fills more of the valley since construction of a dam at the east end of Echo Lake in 1942. Following Arnold's approximate route, we travelled out of the valley, past the present site of Cupar, to three small lakes that form the headwaters of Threelake Creek. Only the northernmost lake has a name, Brice Lake. The lakes are near the rural post office of Zala and are 25 mi north and 5 mi west of the Arnold homestead. Recent water levels are far below the beachlines that existed at th time of Arnold's visit.

The day of our visit there were hig winds, heavy clouds, and some rain bu we did see 30 of the 48 species men tioned by Arnold. We were a week lat for migrating Lesser Yellowlegs, Leas Sandpipers and Northern Phalaropes and we would no doubt have found th Marbled Godwit and Long-eared Owl, our survey had been more extensive The Northern Harrier, Purple Martin an Loggerhead Shrike were seen on a brie repeat visit on 2 July.

With the breaking of the original rassland north of Cupar for grain arming, Upland Sandpipers, Baird's parrows, Chestnut-collared Longpurs, and McCown's Longspurs een by Arnold are no longer common nd we found none on our visit. rainage of many sloughs and marshes n the farming area and the lower levels f the small lakes contributed to our lack f sightings of American Bittern, Canada oose, Hooded Merganser, Yellow Rail nd American Avocet. The Goshawk noved out of the area soon after settlenent and the American Bittern and oggerhead Shrike have decreased rastically in numbers in the last ecade.

Although Arnold's last installment gain read "to be continued," nothing urther appeared. We now know, owever, from museum records that he tayed at least 17 more days and made trip about 21 mi straight north to the cDonald Hills district. There he ollected two Golden Eagle eggs far advanced in incubation from a willow on 6 June and the next day collected four esh Northern Harrier eggs on his eturn trip to Fort Qu'Appelle.

896 Trip

Arnold's 1896 trip received only a alf-sentence mention in the *Osprey*.[5] In , he reported taking his first set of ichardson's Merlin eggs but did not ive the location. The nest may have een near Moose Jaw as this is the cality given for five fresh Merlin eggs ollected on 27 May (data slip WFVZ, ggs no longer extant). WFVZ has data lips that show he also collected a erruginous Hawk egg advanced in cubation from Lakes End (Pasqua ake) on 7 May, two Red-tailed Hawk ets, then a rare species on the open lains, in aspen and willow trees at the ishing Lakes near Fort Qu'Appelle, nd two sets of Goshawk eggs advancd in incubation near Quill Lakes on 8 une.

1897 Trip

On his fourth annual trip, Arnold "travelled several hundred miles with a guide and team, and collected in virgin soil." A brief note was published in the *Osprey* which mentioned his taking sets of Sandhill Crane, Marbled Godwit, Sprague's Pipit, Baird's Sparrow, American Hawk Owl, Swainson's Hawk, Ferruginous Hawk and American Rough-legged Hawk, the latter again no doubt a misidentification.[5] Museum data show that 1897 was a very productive year for Arnold. He spent a good deal of time in the Moose Jaw area and there collected at least 10 raptor sets. Data slips record three Merlin sets with three, four and five eggs taken in the vicinity of Moose Jaw and north of Fort Qu'Appelle. The three egg set was taken from a nest near the latter location 15 ft in a maple on 17 June (WFVZ). Arnold did not then appreciate that Merlins do not build their own nests; he stated that the nests were "open ones, built by the birds with sticks and twigs, lined with hay and grass. They were built about the size of a Crow's nest and placed 15 to 25 feet from the ground in maple trees."[5] No doubt the Merlins were using Crow nests from a previous year; Magpies were not common at that time.

That year, in the November *Osprey*, G. F. Dippie of Toronto questioned Arnold's identification of Merlin stating that he knew of only two authentic sets of "these extremely rare eggs," one of which he had personally taken from the top of a broken black poplar near Calgary on 22 July 1895.[15] (The other set, presumably was taken by Roy Ivor south of Moose Jaw in 1883).[17] Dippie implied criticism of Arnold for not giving "particulars as to locality and date, or whether the parents were secured," yet he ended with a caution to keep the locality a secret, otherwise, "collectors will rush there next season." Dippie further stated that maples do not occur west of Fort William.

The December issue of the *Osprey* published a letter from the agent of the Dominion Crown Lands Office, Regina, stating that the maple "does grow and flourish in Assiniboia," and that maple sugar had even been made. Arnold also responded by providing names and addresses of owners of three of his 1897 Merlin sets and offered to show the two sets he had at Battle Creek.[6] He added that the parents indeed "were shot off the nest" and their identity confirmed.

The controversy continued in the January 1898 issue of the *Osprey* when editor Walter Adam Johnson stated in an editorial note: "The question as to whether or not the Richardson's Merlin breeds in Assiniboia in numbers recorded by Mr. E. Arnold, and incidentally the question of the maple's existence in Assiniboia, threatens to become a controversy of wholesale proportions."[18] Johnson had received a letter from Professor John Macoun stating that the "emblem of Canada" [i.e., the sugar maple] does not grow further west than Fort William.

In retrospect, Arnold had indeed correctly identified both Richardson's Merlins and Manitoba Maples; the latter extends along the Saskatchewan River almost to the present Alberta-Saskatchewan boundary.

1898 and Subsequent Trips

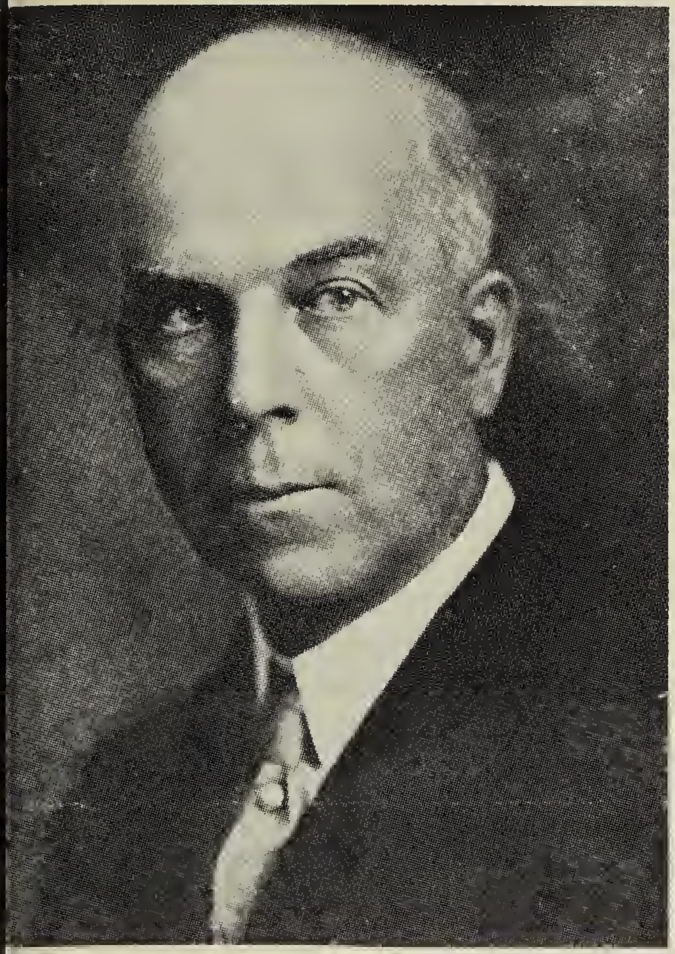
Although in 1912, Arnold wrote of having made yearly trips in 1894 and "for nine years following," records for trips he made subsequent to 1897 are very sketchy.[8] We don't know whether the inappropriate criticism of the maples and Merlins inhibited him from writing further or whether he was simply too busy caring for his immense egg collection. Whatever the reason, Arnold stopped publishing notes concerning his western trips; information about those subsequent to 1897 can only be obtained from egg sets in museum collections.

Apparently 1898 was Arnold's mos successful year for collecting rapto eggs. Concentrating his efforts aroun Moose Jaw and his brother's farm, h took Swainson's Hawk eggs at Lake End (Pasqua Lake) on 4, 6 and 9 June at Last Mountain Lake on 5 and 6 June at Moose Jaw on 5 June, and at Loo Creek near present Cupar on 7 June Ferruginous Hawk eggs were taken a Last Mountain Lake on 1 June and a Lakes End on 5 June. He also too American Kestrel sets at Moose Jaw 2 30 and 31 May and 5 June, and a Craven on 7 June; five fresh Merlin egg northwest of Fishing Lakes on 22 May and a set of Red-tailed Hawk eggs a Lakes End on 7 June.

After 1898, there are fewer Arnol data sets. In 1899, he collected nea Moose Jaw the following: one set of fiv Ferruginous Hawk eggs on 15 Ma (Field Museum), two Merlin sets eac with four eggs on 8 June (WFVZ an American Museum of Natural History) and a set of two Goshawk eggs on June (WFVZ). There is no record fo trips made in 1900 and 1902. In 1901 we know of only one set of fou Ferruginous Hawk eggs taken on 2 May and a set of four fresh Merlin egg taken on 5 June, both taken near hi brother's ranch. There is no record for a 1903 trip west. A set of five Merlin egg collected from a previous Magpie nes at Lethbridge, Alberta (his first recognition of this species' use of other bird' nests), a set of five Merlin eggs taken a Crescent Lake south of Yorkton on 1 May, and a set of five Merlin eggs taken at Lakes End on 30 May document his last trip to the North-West in 1904. In 1905, he visited Manitoba and Montana but we know of only one set of Sharp shinned Hawk eggs taken near Lake Winnipegosis and one set of four Prairie Falcon eggs he collected on 28 April in the Bear Paw Mountains of Montana.

Other Collections

Arnold was also an active collecto



Edward Arnold after his egg collecting days were over

near home. Between 1895 and 1908, he collected several sets of Red-shouldered Hawk eggs before departing for Assiniboia. These were collected primarily in the Battle Creek area in Kalamazoo, Calhoun, and Penfield counties but he also made collections in LaPorte County in nearby Indiana.

Arnold was long credited as the first person to collect a full set of four Kirtland's Warbler eggs on 15 June and again on 29 June 1904.[7] Norman A. Wood had found the first nest of the species which nests only in northern lower Michigan on 8 July 1903. It contained two large young and one egg. Only in 1926 could it be revealed, without danger of resulting arrest, that an oologist without a collecting permit, named J. A. Parmalee, had beaten Arnold by 9 days, taking a set on 6 June 1904. The full story was not told until publication of the definitive monograph, *The Kirtland's Warbler.*[19]

In 1908, Arnold was appointed Freight Claim Agent of the Grand Trunk Railway and he moved to Montreal. He continued to collect raptor eggs and, between 1912 and 1918, took several sets of Red-shouldered Hawk and Broad-winged Hawk eggs near Dorval and Montreal. There is no record that he made any more trips west. Indeed, his nephew John, in Regina, born in 1903, knows nothing of his uncle Edward. Arnold did, however, return to collect eggs in Michigan where he took Red-shouldered and Red-tailed Hawk sets in the vicinity of Battle Creek until 1914.

In 1911, he made a trip to Newfoundland with a Montreal friend who had once collected Merlin eggs at Lethbridge.[11] Elated, Arnold shared the eight weeks of observations in an 8-page article in the *Auk.*[8] On his trip, he recorded 68 species, found the nests and eggs of 17, and the young of another four species. Strangely, his companion, W. J. Brown, had already published an almost identical list with four fewer species in the *Ottawa Naturalist* 4 months earlier.[12]

Arnold did not collect eggs after 1920. In 1923, at the age of 60, he was appointed General Claims Agent for the Canadian National Railways. He died on 2 January 1930 at his home in Montreal. At the time of his death, he "had seen nearly fifty years of railway service, filling positions until finally appointed Auditor of Freight Claims, with jurisdiction over the whole of the Canadian National System."[20] In the *Oologist* of April 1930, R. M. Barnes wrote: "He was one of the most active of America's oologists, and never lost interest even up to the last days of his life. During his life time he gathered together one of the most splendid and representative collections of eggs of North American birds in existence."[10] Mousley described Arnold as "quiet, unassuming and retiring in his manner, strong in his convictions, loyal to his friends and dependable at all times." Mousley went on to say: "He had been interested in birds all his life, and travelling about as he had to do in his various railway capacities gave him the opportunity of studying birds from the Atlantic to the Pacific. He was a fearless climber and his large collection of eggs representing over a thousand species and sub-species was well known among collectors."[20] Arnold was survived by his wife Altabella Simons Arnold and one daughter Carolyn.

Most of the eggs that Arnold collected personally remained in Battle Creek in "the wooden building of the old home" (letter of 10 March 1942 from Brigham to Arnold). This was for years in the care of a Mr. Thurston (letter from R. W. Tufts to Alta Arnold about August 1937). The eggs were all "securely locked in cabinets" (Alta Arnold to Brigham letter of 26 March 1936). From later letters it seems that this building eventually was demolished and the Salvation Army built on the site.

Mrs. Arnold had an agent who thought he could sell the egg collection in its entirety. A circular of the time claims the collection to be "one of the most complete, as to species represented, ever offered for sale. The only major speciments [sic] not represented are the Great Auk, Labrador Duck and Heath Hen . . . contains the Knot eggs. A set of four, the first known to science, originally belonging to the collection of the Hon. John Lewis Childs, for which he paid $1,000. Two sets of the California Vulture, a bird verging on extinction . . . A set of the Ivory-billed Woodpecker . . . Some Museums that show the Great Auk cannot show this species . . . three sets of the Passenger Pidgeon [sic] . . . number of specimens 19,000." Among the birds of prey there were 11 sets of Broad-winged Hawk, 37 sets of Golden Eagle, 21 sets of Peregrine Falcon and 12 sets of Richardson's Merlin. There were a great many warbler sets, including 3 of Kirtland's Warbler and 22 of Cape May Warbler, each set in its nes

Only a few of the rarest eggs, ir cluding those of the Ivory-bille Woodpecker and Knot were kept i Montreal, (Alta Arnold to Brigham, lette of 12 April 1936), while other valuabl eggs such as those of the Californi Condor remained in storage in Battl Creek.

Finally on 4 November 1936 a agreement was signed by Edwar Brigham, Jr., of the Kingman Memoria Museum of Natural History in Battl Creek to care indefinitely for a "oological collection of severa thousand specimens owned by Mrs. Ar nold . . . though the collection is receiv ed primarily for safe keeping, a portio of it at least may be exhibited . . ."

Altabella Arnold kept Edward's bir books until 1937, when she sold them t Dutton's in New York. R. M. Barnes ex pressed some interest in buying the eg collection "to add the extra choic specimens to the collection at the Fiel Museum in Chicago" as noted in a lette of 2 January 1937 from Altabella S. Ar nold to E. N. Brigham. In the same lette Mrs. Arnold told Brigham of a repeate offer of $5000 from Robie W. Tufts o Wolfville, Nova Scotia, for the haw eggs alone, but she said "I could n divide the collection." She did sell hi two California Condor eggs at $40 each and eight sets of two eggs each o the White-tailed Kite. Even though th depression of the 1930s was virtuall over, there were fewer and fewe oologists interested in purchasing a egg collection, as Alta Arnold learned t her sorrow. Mrs. Arnold first offered th egg collection to Barnes for $25,000 just over one-third of its calculated valu of $63,000 in the 1922 catalogu published by Barnes and compiled b the "committee of 25" which had includ ed Arnold (letter Alta Arnold to Brigha 26 March 1936 or 1937). On receipt of counter offer of $5,000, Mrs. Arnold who had a "sentimental feeling" fo

Michigan, then offered the collection to Dr. Josselyn Van Tyne at the University of Michigan Museums at the same price (letter of 5 August 1939), now claiming the catalogue value (in error) to be $73,000. Even $5,000 was a considerable sum then, and Van Tyne declined. Brigham in a letter of 14 November 1939 advised Mrs. Arnold: "you would only be able to sell to the University of Michigan by lowering your price more than I believe you would."

Besides eggs, Arnold's collection included nests and bird skins. In a letter of 6 November 1941, Brigham told Alta Arnold that "the nests are stored on a rack next to the ceiling in our carpenter shop, in the sub-basement of the museum building. Last week . . . the carpenter found . . . that the mice which we have fought for years in our storage rooms, had done their destructive work. It is too bad to have these birds' nests made into mice nests . . . to let the nests remain in their storage spaces is to invite their complete destruction." The eggs, well protected in sturdy cabinets, remained there "in a very dirty, drafty part of the basement" (letter of 23 October 1972 from Mrs. John Ringier (Cruttenden) Fick to Raymond Quigley, WFVZ) until April 1952 when John Cruttenden, an avid oologist from Quincy, Illinois, bought the eggs and saved the collection (letter of 14 September 1953 from John Cruttenden to Ray Quigley). When Cruttenden died prematurely at age 41 years on 7 September 1956, the collection was purchased by Ed. N. Harrison, who packed the collection in a rented van and drove it to Los Angeles where it now forms part of the collection of the Western Foundation of Vertebrate Zoology. A small portion of the Arnold collection is still retained in the Kingman Museum in Battle Creek.

Acknowledgements

We are grateful to all those who went "the second mile" in helping us learn more about Edward Arnold: Janet Hinshaw, Bird Division, Museum of Zoology, University of Michigan; John Bull, American Museum of Natural History; Celia M. Donnelly, Information Services Librarian, Canadian National, Montreal; B. E. Poole, Prevention Services Officer, and Jim Magill, Supervisor of Merchandise Claims, Canadian National, Winnipeg; E. E. Meyers, Director of Freight Claims, Association of American Railroads, Chicago; Lloyd Rodwell, Saskatchewan Archives, Saskatoon; and especially to Lloyd Kiff and Ray Quigley, Western Foundation of Vertebrate Zoology, Los Angeles and to Robert Learner and Edward M. Brigham, Jr., of the Kingman Museum of Natural History, Battle Creek.

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Winter

J. B. Gollo

SOME JUNE-JULY BIRD RECORDS FOR THE PRAIRIE PROVINCES

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askatchewan. S7N 0X4

This article was originally written for *merican Birds*, published six times a year y the National Audubon Society, 950 Third ve., New York, N.Y. 10022. Four issues over reports of outstanding bird events hroughout North America in spring, summer, ll and winter. Hundreds of cooperators ontribute records to compilers of data for 26 egions, including the Prairie Provinces egion. Of the other two issues, one is evoted to breeding and wintering bird cen- uses and the other to Christmas Bird Counts – 1357 in 1981. The six issues, which also ontain articles on birds, exceed 1000 ages. Subscription is $18 (US).

For Saskatchewan, reports are usually eceived from natural history societies in loose Jaw, Regina and Saskatoon and from irdwatchers living in Biggar, Broadview, arnduff, Dilke, Eastend, Foam Lake, Fron- er, Good Spirit Lake, Grenfell, Indian Head, enaston, Kenosee Lake, Kindersley, La oche, Oxbow, Raymore, Spring Valley, Val larie, Waskesiu Lake, Webb, White Bear nd Wolseley. A separate report is compiled om these data. (See Jim Wedgwood's sum- ary of spring migration in this issue.)

Anyone wishing to become part of this etwork should contact Bernie Gollop. otices and forms will then be sent out. The inter period covers Dec. 1 through Feb. 28. pecies are discussed in A.O.U. order.

Mean temperatures in June 1982 nged from 2.5°C above normal in entral Alberta to 3°C below average at hurchill and Winnipeg. July mperatures were near normal across e region. Precipitation was scanty verywhere in June. Edmonton reported s second-driest June on record and any locations in Saskatchewan were e driest in more than 20 years. ochrane, Alta., had 4 in. of snow 5-6 une. July precipitation was almost normal in Saskatchewan and up to twice normal west of Edmonton and north of Winnipeg. Lethbridge, Alta., had 63 mm rain in less than 1 hour and Emerson, Man., had 81 mm in 75 minutes.

July ponds in s. Alberta totalled 503,000 (54% above last year), 964,000 in s. Saskatchewan (165% more than last July) and 195,000 in s. Manitoba (7% better than a year ago).

On 29 May from Saskatoon w. and s. in Saskatchewan (and into s. Alberta), there was a snowstorm that dumped 10 cm (4 in.) of snow around Saskatoon with average winds of 38 km/hour and a temperature range of 0°-2.6°C. In the Cypress Hills area drifts reached 6 ft. and thousands of livestock were lost. Near Saskatoon, many swallows rested on the snow while others were apparently feeding over open water. Much of the snow disappeared within 3 days but the effect on birds, particularly insectivorous species, must have been devastating. However, no one reported numbers of dead birds. Barn Swallows, Least Flycatchers, House Wrens and Clay-colored Sparrows decreased significantly after the storm around Swift Current (CH). See also Tree Swallow and Mountain Bluebird accounts below.

LOONS THROUGH WATERFOWL — Thirty Com. Loons had congregated on Waskesiu L., Prince Albert N.P., by 25 June (S. Ross). A Red-necked Grebe 5 June was a first for Churchill (S. Shadick) while a Pied-billed Grebe 30 June was an accidental there (BC). There were good indications of a Great Blue Heron colony at Ft. McMurray, n. of the published breeding range (JG).

An ad. Snowy Egret 19 June at Ninette was a Manitoba rarity (ph., DF, HL). A Least Bittern 30 June was another first for Churchill (BC). Five Brant 7 June and three on 12 June were accidentals there (BC). A Snow Goose at Whitebear, Sask., regularly associated with a Canada Goose in a small flock of Canada until all left about mid-June (S. Jordheim). A Garganey was photographed near Strathmore 12 June Alberta's third record (ML). Another accidental at Churchill was a Harlequin Duck 24 June (BC), while the first Ruddy Duck for the area was a 3 June (K. John).

HAWKS THROUGH COOTS — Sharp-shinned Hawks were noticeably down in Saskatchewan's boreal forest (WH) while one wandered to Churchill 15 June (V. Chartier, D. Paulson). In Saskatchewan, Swainson's Hawks had more failures than usual; 35 of 71 nests in three areas produced 68 young. The late May snowstorm apparently caused six Golden Eagle nests to slump down clay cliffs. Prairie Falcons had average success and Merlins continued to reoccupy sites in the Kindersley-Kerrobert area deserted during the heavy dieldrin period of the 1960's (SH). A flock of 20± Swainson's Hawks in a field at Lyleton, Man., was unusual for 19 June (DF, HL). Marsh Hawks increased in the Raymore and Calgary areas (WH, SL, AW). Four young Peregrine Falcons were released in Saskatoon; two are known to have died and two have disappeared (BG). An adult sighted near Delisle, Sask., was unusual for 8 June (BG). A pair of Sandhill Cranes was found regularly s. of Water Valley, Alta., from late May through 5 June, 60± mi. s. of their published breeding range (L. Gibb, JP, LO, SJ). A white Am. Coot was seen with normally plumaged birds at Moose Jaw 15 July (S.&G. Wait, C. Letkeman).

SHOREBIRDS — On 14 July Chris Adam (ph.) discovered two ad. Piping Plovers (plus Semipalmateds) with downy young on the s. shore of Lak Athabasca — a n. extension of i published Saskatchewan breedin range by more than 400 mi. He ha seen an adult in the same location 1 July 1981. Two ad. Mountain Plove were observed near Onefour, Alta., July (CH). An estimated 6,000 Rudd Turnstones were found near Churchill June (BC) while a Willet there 28 Jun (TS, DM) and 3 Purple Sandpipers 1 June were accidentals (BC). Whimbrel turned up at Birds Hill P. near Winnipeg 1 July, an unusual dat (R. Koes). Rare shorebirds in th Calgary area included a Red Knot 2 July, a White-rumped Sandpiper 2 July, two W. Sandpipers 24 July, 1 Hudsonian Godwits 14 July and one o two Ruffs 24-31 July (JS, MS, RBa RBu, AS, B. Storm). Another Wester was seen near Cochrane, Alta., 3 Jun (SJ, LO). On 27 July a flock of 11 Marbled Godwits was found o Ingebright L., Sask., just w. of the Grea Sand Hills, as were 1,700 Wilson' Phalaropes (CH). What appeared to b a late non-breeding concentration of 3 Am. Avocets was noted 5 June nea Calgary (RBu). Pakowki L., Alta., ha one Black-necked Stilt 15 May (G Thorn) and two 3 Aug. (ML). What is apparently the second spring record for Red Phalarope in Alberta was a full plumaged, studied for 10± minutes o a mudflat with other shorebirds, 3 Jun near Ft. McMurray (JG).

JAEGERS THROUGH HUMMINGBIRDS — The first documented Saskatchewan record of a Long-taile Jaeger, diagnosed as being in it second-year nuptial plumage, stayed a Last Mt. L. 8-17 July and was caugh (SL, WH, BK, ph., B. Luterbach); ther are fewer than 10 records for th province. Alberta's third record for Black-legged Kittiwake was an adult- o nearly adult-plumaged individual n.e. o Calgary 6 June (ph., JS, MS, W Wilson). Churchill's first California Gul

ong-tailed Jaeger W. C. Harris

vas seen 8 and 11 June (F. Cooke) and s first Franklin's Gull 17 July (L&CW). ther accidentals there included a lack-headed Gull 15 July (DM, TS), a aughing Gull 9-25 July (BC, DM), Little ulls periodically through the period vith a maximum of three 5 June (DM) nd an ad. Black-legged Kittiwake 18 uly (BC, m.ob.); Ross' Gulls peaked at 0 on 20 June (BC). Southern Manitoba ad its second Great Black-backed ull, an immature, at Oak Hammock 2- June (T. ffrench, m.ob.). Stragglers ontinued at Churchill with a Black uillemot 17&18 July (BC, H. Currie). askatchewan's fifth Band-tailed igeon was seen 25 and 28 June near aymore (WH). Great Horned Owls in askatchewan showed the effects of the eclining snowshoe hare population fter peaking in 1981. About 30% of airs did not attempt nesting and 78 ests produceed 153 young, just under .0 young per successful nest (SH). urrowing Owls appeared to be up in anitoba and the Saskatoon area but own near Regina (H. Copland, BG, K). More than 50 breeding pairs settl-d in s. Manitoba where over 100 young vere banded (B. Ratcliff *fide* W. Koonz). Although nests of Pygmy and Boreal Owls are rarely found one of the former held two young near Priddis, Alta., 11 July (AW, KJ, GS); one of the latter had two young 25 July in Calgary (AS) and there was another nest at Birds Hill P.P., Man. (G. Smith). Late Com. Nighthawks were migrating 1 June (30 birds) at Good Spirit Lake and 2 June (45±) at Regina (J.&W. Anaka, T. Riffel, BK). A very dark swift with a slightly forked tail, apparently a Black Swift, not previously reported in Saskatchewan, was studied for 5 minutes over Mortlach 4 July at heights from 30 to 80 ft. (P. Browne). A hummingbird with a completely orange body, the description of a Rufous Hummingbird, was seen 13 June n.w. of Southend, Sask., more than 500 mi. n.e. of its breeding range (K. Roney).

WOODPECKERS THROUGH BLUEBIRDS — A Lewis' Woodpecker strayed to Calgary 17 July (RBa). With about 15 Manitoba reports to date, a Scissor-tailed Flycatcher was a rarity at Oak Hammock 5 June (ph., DF). A Say's Phoebe 18 June was the first record for Churchill (K. Kaufman). Four species, recently common at Ft. Mc-

Murray, increased significantly over 1981: Tree and Barn Swallows more than doubled and Black-billed Magpies and Common Crows increased fourfold (JG). Tree Swallow nesting around Saskatoon was delayed until after the May storm, and was thus more uniform than usual; occupancy and success were down modestly with 91 successful and 21 unsuccessful nesting attempts. Nevertheless, the usually evident surplus of swallows seemed not to be present; it may be that half the swallow population perished during the storm (MH). The first summer record of a Black-capped Chickadee for Churchill was 11 June (BC). A breeding record for White-breasted Nuthatch was a rarity for Calgary (AS). The first recent breeding record for Sage Thrashers in Saskatchewan was a flightless young caught 8 July n.w. of Govenlock (ph., WH). Two Hermit Thrushes singing 17-23 July near Dundurn, Sask., were s. of their published breeding range (BG).

Sage Thrasher *W. C. Harris*

WARBLERS THROUGH FINCHES — A Magnolia Warbler singing in Calgary 30 June was apparently out of its breeding range (JP) as were a 12 June Chestnut-sided, also singing (RBa), and a Cape May in the foothills w. of Calgary 18 July (AW, C.&M. Wershler). Connecticut Warblers apparently on territory were n. of the published breeding range at Ft. McMurray in June (one bird; JG) and s. of near Priddis 11 July (2; AW, KJ, GS and near Bottrel, Alta., (at least 5; SJ Brewer's Blackbirds, another commo bird at Ft. McMurray, quadrupled thi summer (JG). A pair of Scarle Tanagers nesting at Dauphin, Man., wa n. of their previously known breedin range (B. Walley). In Calgary three singing Rose-breasted Grosbeaks 20 Jun hinted at breeding s. of their norma range (AS). An Indigo Bunting nea Roche Percee, Sask., 5 July indicated new breeding area (WH). Single Lazu Buntings were well out of range at Maidstone 20 June (WH) and near Beausejour, Man., 3 June (M. Siepman, G Grieef, N. Cleveland). There has bee only one record of a Purple Finch a Churchill until one was seen 18 Jul (L&CW). Lone Sharp-tailed Sparrow singing 12 June near Irricana an Langdon, Alta., (JS, AW) and 18 Jul near Calgary (W. Hall) were beyon their normal breeding range. A Dark-eyed Junco was seen in Moose Jaw 2 June (M. Ritchie). A Field Sparro showed up again this year near Beausejour, Man., through June and July (P Taylor). Clay-colored Sparrow number more than doubled at Ft. McMurray possibly because of increasing habita (JG). An undocumented Brewer's Sparrow was reported at Churchill 2 June, far from its closest range in s.w Saskatchewan (DM, J. Skykoff, TS).

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SASKATCHEWAN SPRING BIRD MIGRATION — 1982

JIM WEDGWOOD, 610 Leslie Ave., Saskatoon, Saskatchewan. S7H 2Z2

This is a summary of bird observations by more than 100 people from various parts of Saskatchewan for the period 1 March to 31 May 1982. The author is grateful for the compilations made for Moose Jaw, Regina and Saskatoon observations by Edith Kern, Bob Kreba and Bernie Gollop.

WEATHER

Spring was slow, with many species returning late. Cool weather and in particular a freak blizzard at the end of May were hard on insectivores, especially vireos, swallows and flycatchers. A return to wetter conditions in most areas produced a brighter picture among waterfowl and shorebirds. On 17-19 May a massive migration of passerines hit the south on a 400-mile front from Winnipeg to west of Moose Jaw. At Regina it yielded the best warbler wave in years and at Nicolle Flats, northeast of Moose Jaw, it enabled Moray Lewis to log 101 species in four hours.

RARE AND UNCOMMON BIRDS

Spring 1982 brought a rash of unusual birds. An asterisk indicates existence of the confirmation now customarily sought for formal recognition of a rarity report.

European Wigeon, Echo Lake 25 April by M. Callin and J. Nelson*.

Whimbrel, at Kannata 18 May by S. Cohrs *et al.*

The most exciting report of all, an **Eskimo Curlew** near Monica Slough, south of Regina 14 May by R. Kreba.

Glaucous Gull in first year plumage, Qu'Appelle River 16 May by S. Cohrs *et al.*

Two **Violet-green Swallows** on Jones Peak, west of Eastend 24 May by B. C. Godwin and K. M. Meeres*.

Northern Mockingbirds one near Saskatoon 16 May by B. C. Godwin and K. M. Meeres*; one in Regina 20 May by T. Riffel; and another sighting in Regina 29-31 May by A. Robinson, R. Kreba, v.ob*.

Varied Thrush at Tyner 23 April by L. McMiller *fide* S. Jordheim.

Wood Thrush conveniently present in F. Brazier's garden, Regina 29-31 May m.ob*.

Townsend's Solitaire at Regina 19 April by H. Moore.

Male **Black-throated Blue Warblers** in Regina: one 23 May by T. Bedford; the other, 27 May by C. Cowan.

Pine Warbler, also in Regina 17 May by J. Nelson.

Western Tanager, a male in full alternate plumage, Regina 3 May by T. Riffel and B. Luterbach*.

Cardinal in Saskatoon March through May by P. O'Neil, m.ob*. (presumably the same male present over winter).

Male **Lazuli Buntings** in Wascana Centre, Regina: one, 23 May by S. Cohrs *et al*; and by C. Cowan and T. Riffel, one 24 May and two 25 May*.

Brewers Sparrows at Lodge Creek near Govenlock 22 May by B. C. Godwin and K. M. Meeres*; and at the Prairie Wildlife

Interpretation Centre (P.W.I.C.) near Swift Current, 26 May by C. Harris.

GENERAL SUMMARY

When relevant, a bird's presence on American Birds Blue List or on the Canadian threatened or endangered species lists is noted. Statistical arrival/departure data are in a separate appendix available on request.

The majority viewed Eared and Pied-billed Grebe numbers were down, possibly due to the 1981 drought. Several Eared Grebe colony counts were obtained, e.g., 375 on Rice Lake 30 May and 200 on Buffalo Pound 19 May (JW;ML). The usual spring Western Grebe congregations were noted on the larger lakes and reservoirs: Cypress 30, Lac Pelletier 125, Diefenbaker 110, Buffalo Pound 200, Bradwell 130, Wascana 35 (v.ob.).

Twenty-five White Pelicans in an alfalfa field southwest of Maple Creek was unusual and a count of 600 was received from Craven 23 April (BCG,KM;BL). A heronry near Fillmore had 17 Great Blues and Nicolle Flats had 25. Four Great Blue Herons arriving at Crooked Lake on 11 April were greeted by solid ice (JH). Numbers o Great Blue and Black-crowned Nigh Herons as well as American Bitterns were believed to have declined agai (v.ob.).

The U.S.-Canadian waterfow breeding population survey showed Canada Geese up 87% over the ten-year average. Some impressive counts of migrating geese were reported: totals of 11,600 Canadas and 7,300 White-fronts moving north at Raymore 18-22 April (WH,SL) and 80,000 Snows congregated near Fillmore 9 May (FB) plus 24,000 in other south-central localities (PB;JH;m.ob.).

Three unusual species of ducks were found: a Black Duck near Hanley (PB); two Cinnamon Teal on the Frenchman River and another from Cypress Lake (CH,BCG); and a Hooded Merganser also on Cypress Lake (BCG). An early brood of eight downy young Mallards was seen near Saskatoon 27 May (S.N.H.S.). MB noted that the presence of pairs of Redheads and Canvasbacks around Dilke was unusual for that area. Flocks of 30 and 25 Red-breasted Mergansers were on Cypress and Yellow Lakes in the southwest (MG, JG;CH).

White Pelicans, Tobin Lake Reservoir *J. Polson*

As usual, Turkey Vulture observations were mainly in the southwest (four birds) and the Qu'Appelle Valley (seven) (v.ob.). A vulture caused some excitement by moving into Moose Jaw (PK). Province-wide, accipiter reports totalled 13 Goshawks, 25 Sharp-shinneds and 30 Coopers. Red-tailed Hawks had a good migration and some respectable counts were logged on 10 April: 49 birds, Regina area (TR,CA), 39 birds, Saskatoon area (S.N.H.S.), and 27 birds, Stewart Valley (CH). Both of the less common Red-tailed Hawk subspecies were reported, 12 Harlan's being around Regina and a Krider's was at Saskatoon (TR,CA,BL;JW). Breeding Swainsons "seem numerous everywhere" (MB). Regarding 30 nest sites at Kindersley, "the crop looks good" (JMH).

The Bald Eagle picture was confusing: the south had more than average numbers during migration while central Sask. observers at Prince Albert National Park (P.A.N.P.), Foam Lake and Saskatoon noted otherwise — most unusual. The Marsh Hawk population may be coming back: "Definitely up" around Regina (RK), and five observers elsewhere each had a daily count of 20 or more. Eight of 27 Peregrine Falcons reported across the prairie provinces were in Saskatchewan (v.ob.) which included a pair performing a spectacular courtship flight over Wascana Lake (FL,TR,CA). At least seven pairs of Merlins were nesting in Moose Jaw (*fide* EK) and two territorial pairs were noted in Regina (*fide* RK).

Ruffed Grouse continued to be very low at least as far west as Prince Albert. Good Spirit and Moose Mountain Provincial Parks (P.P.), Sheho and P.A.N.P. all reported marked decreases (B&JA;RD;WN;MS), however, they remained common around Raymore (WH,SL). Sixteen and 19 Sage Grouse were on two strutting grounds in the Frenchman River Valley on 1 May (CH). Northbound Sandhill Cranes were on the move on 17 and 18 April (v.ob.), 6,000 being estimated over Spring Valley and 10,000 passing Raymore (FB;WH,SL). Two seldom-reported Yellow Rails were detected in the marshes at Nicolle Flats (GAZ).

Only three Piping Plovers were recorded, two by CE at Buffer L. and a single near Regina by RK. Near Moose Jaw, flocks of ten and seven Ruddy Turnstone were the first for that area since 1978 (GAZ;S&GW). Unexpected was finding eight of the aptly-named Solitary Sandpipers on an island just three feet in diameter (JBG). Red Knots appeared twice, two on Last Mountain Lake 18 May and a surprising 50 on Pasqua Slough south of Regina 23 May (SC *et al*;JN). The peak counts on "peeps" and other sandpipers showed that Kutawagan Lake, north of Last Mountain Lake, and Saskatoon were the 1982 spring shorebird hotspots.

It was a good spring for less frequently seen shorebirds. Dunlins and Buff-breasted Sandpipers were further examples, with ten of the former (TR,TL, JN;CE) and 90 of the latter (TR;CE,BCG,KM), in the Regina and Saskatoon areas. Eight Hudsonian Godwits were near Saskatoon 8 April, with another two spotted 9 May (CE;MDG).

A large flock of California Gulls, 250 birds, was on the river at Saskatoon 22 April (CE). Over 2,000 Franklin's Gulls were in the breeding marshes at Rice Lake 30 May (JW).

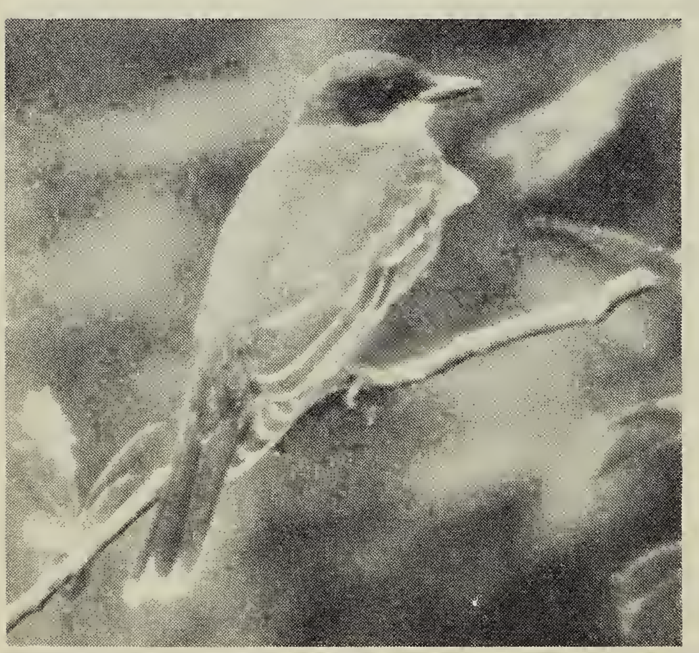
Forster's Terns were located at six sites, the largest tally being 100 on Nicolle Marsh 19 May (ML). Last Mountain Lake where 200 were counted 22 May (WH,SL). Caspians Terns, seldom seen, surprised three observers, SC discovering one in the Qu'Appelle Valley 16 May, DF one on Ekapo Lake the next day (same bird?) and JBG one on Blackstrap Reservoir 23 May. Black Terns rebounded somewhat from their drought-induced absence, but large colonies were apparently not being found.

The Mourning Dove scene was variable, SJ reporting numbers down drastically around White Bear, while HP noted there were lots at Oxbow again this year. HP saw a young dove fledge from an old Robin's nest on an early 25 May.

Stuart Houston remarked that Great Horned Owls were down, his bandings were 140 compared to over 400 last year. Other reports totalled 22 nests with 54 young (v.ob.). As last year during March and April, territorial-calling Screech Owls were heard along Wascana and Cottonwood creeks (v.ob.).

Few Common Nighthawks were tallied until the very end of May when a small wave occurred, Good Spirit P.P. counting nine, Moose Jaw 25 and Saskatoon 16 (B&JA;GAX;m.ob.). An unexpected visitor was a Pileated Woodpecker in Moose Mountain P.P. on 18 March (RD). Hairy and Downy Woodpeckers were down (v.ob.) — "very few in the woods" (WN).

Most flycatcher species were down (v.ob.), the only increase reported being Say's Phoebes (CH). However, Moose Jaw and Regina experienced a wave on 19 May, hundreds of *empidonax* being on Nicolle Flats (ML) and Regina having its best flycatcher migration in years (RK). A flock of 50 Eastern Kingbirds was seen by B&JA on a late 30 May. Western Kingbirds were thinly reported and Saskatoon's May count totalled only 13 birds. An Eastern Phoebe was nesting on 25 April (DF). Moose Jaw recorded its first W. Wood Pewee since 1979 (ML) and in an unusual sighting 16 of those birds were insect hawking from a fence in Regina 24 May (TR). At Sheho WN remarked that the 9 March Horned Lark arrival was two weeks later than normal. Big waves evidently occurred on 4 March, MG seeing 1000's in the Central Butte area and on 21 March when JH estimated 5,000 along 6 miles of road near Grenfell.



Eastern Kingbird *Juhachi Asai*

The nine reports (v.ob.) from the Cypress Hills - Saskatoon belt of Rough-winged Swallows suggest observers are now taking the time to identify these birds. None of the reported colonies of the threatened Cliff Swallow exceeded 100 birds, an unusual occurrence.

Incursion by Crows into our cities was increasing; an estimated 100 were in Moose Jaw on 31 March (PK) and a roost in Saskatoon built up to 3435 birds by 7 April (JBG;m.ob.). Single White-breasted Nuthatches were found at Bethune and Spring Valley (DL;FB), as well as in Moose Jaw and Regina (*fide* EK&RK). Four Brown Creepers were spotted (LB;S&GW;S.N.H.S.); and even scarcer was the Winter Wren identified at Raymore 29 May (WH,SL). An exceptional finding was a well observed Rock Wren on a Dilke area doorstep 1 May (MB); and also distant from its usual haunts was one foraging in a ditch near Regina 8 May (TBe,CC). More to be expected was BCG's sighting of six Rock Wrens on Jones Peak 24 May.

RD provided an account of a Robin fighting its reflection: for 2 weeks it kept flying at the glass in a door, then constantly for a further 3 weeks it flew at

hemian Waxwing W. C. Harris

indows of a nearby cottage and was lso seen charging at the windows and ide mirrors of a car. Mountain luebirds were in unusual situations: ne was in a Moose Jaw garden on a ery early 1 March (PK) and at enaston two pair nesting by 8 April B); yet the first one at Sheho, on 13 pril, was about two weeks late (WN). xtraordinary for spring was a high ount of 40 bluebirds in the Regina area April (CA,TR). Only the Saskatoon ay Count on the 30th tallied a Golden-rowned Kinglet. The huge flocks of ater Pipits in Alberta and Manitoba eemed absent here, a modest 35 on 11 ay being our only significant report out eleven records (WH;v.ob.).

Bohemian Waxwings hung on well to spring, Regina having 1,500 on 4 pril. While observers in the south were oting the last Bohemians, MS was ecording the first one for P.A.N.P. on April. The May Count on the 15th elded 17 Loggerhead Shrikes for egina.

The 1 and 5 May sightings of Black-and-white Warblers were very early (GAZ;B&JA). RK's daily tallies for 17-20 May of observers' reports of Tennessees illustrates the abruptness and size of Regina's huge warbler wave: 25/150/200/10 birds. Five seldom-seen Nashvilles were recorded at Regina, Saskatoon and Raymore 16-30 May (RT;FR;WH,SL). Yellows arrived inexplicably very late in the east-central region where first arrivals were 29 May and 1 June at Good Spirit P.P. and Foam Lake (B&JA;WN). The totals of uncommon (for the south) Magnolia, Cape May and Black-throated Green warblers were 32, 13 and 10 birds (v.ob.). "Audubon's" Yellow-rumped Warblers were seen at White Bear (one) and Regina (three) (SJ;TR). Palms were more frequently reported than usual, 18 records over a lengthy 4-30 May period. These birds peaked at 50 on 20 May in Regina (v.ob.). Another of our scarce warbler species, the Connecticut was noted once in Regina 19 May by TR and three times on the Saskatoon May Count (JBG;CE). Observers did better with Mournings, 16 being counted province-wide. Three reporters remarked that Common Yellowthroats seemed fewer and Saskatoon's May Count registered nine compared to the more usual 30's and 40's.

Bobolinks were common around Saskatoon, seven being tallied 25 May (JBG *et al*) and 12 on the Mayday Count (v.ob.). Yellow-headed Blackbirds were up and impressive flocks of 450 were on the Valeport marshes and on Nicolle Flats (TR;ML). Early Redwinged Blackbirds were a flock of 20 males near Val Marie 15 March (SK).

Among the grosbeaks, Rose-breasteds were widely reported in good numbers, e.g., seven at Spring Valley 21 May and six near Lac Pelletier 23 May (FB;CH), but Regina and Moose Jaw were the hotspots, over 30 birds being tallied in each centre during the 19 May migration (m.ob.). As usual, Evenings were most numerous in east and central districts, the peak being 200 birds near Oxbow in March (RD). The beaks of some Evenings were a light green by 2 April (MCh). An exceptional spring visitant was a Black-headed Grosbeak at Spring Valley 19 and 21 May (FB). Pine Grosbeaks may be in a low with only three localities reporting them, Moose Jaw, Raymore and Good Spirit P.P. (PK;WH,SL;B&JA).

The bulk of the Common Redpoll departures appeared to be 12-24 April as most (10) observers last-seen dates bunched into this period. Just prior there seemed to have been a distinct wave, some large flocks being reported, e.g., 400, 800 and 4,500 near Swift Current, Swanson and Raymore (BCG,KM;JBG;WH,SL). Red Crossbills showed up in just three reports, a female in Saskatoon, four in Regina Cemetery and three at Kenosee (JBG;TR;RD). Even fewer White-wingeds appeared: a female in Regina (TR), a singing male at Raymore, WH noting "not normally seen in spring". Few Rufous-sided Towhees were reported — for instance, the Saskatoon May Count was 31, and it was this low only once between 1969 and 1981. Lark Buntings often absent from the extreme north of the range, were widely reported in this area, e.g., from Foam Lake, Bradwell, Kenaston, Asquith, Saskatoon (v.ob.). At Webb 20 were counted on 23 May (CH).

Savannah, Grasshopper and Baird's sparrows were all scarce. Vespers were the most widely reported of grassland sparrows, with LB noting them as "the most common field sparrow," but RK remarked, "continues scarce." Unusual was a flock of 100 Vespers seen by BCG and KM 2 May near Dundurn. Single Sharp-tailed Sparrows were by Wascana Creek and near Raymore 15 and 24 May (RK;WH,SL). Regina's four sightings of Lark Sparrows (v.ob.) and one near Raymore on an early 7 May (WH,SL) were noteworthy.

Dark-eyed Juncoes were reported throughout a lengthy migration period, starting with an early 1 March at Moose Jaw and ending with two late birds on 15 May at Saskatoon (GAZ;BCG,BJ). An estimate of 1000 on 19 April made P.A.N.P. the junco hotspot (MS).

White-crowned and White-throated sparrows were going through in the 1s and 3rd weeks of May (v.ob.), with some not unexpectedly still being found at the end of the month (S.N.H.S.). Comments that Song Sparrows are ". . . scarcer each year" (WN) and were ". . . late and low" (CH) are not necessarily refuted by the finding of several hundred at Nicolle Flats during the big migration of 19 May (ML). The largest Snow Bunting flocks reported — small compared to previous years — were 600 on 23 April at Buck Lake and 200 30 April at Spring Valley (RK;FB).

OBSERVERS

Chris Adam, Bill & Joyce Anaka, Lawrence Beckie, Tony Bedford, Margaret Belcher, Tom Beveridge (TBe), Gerry Beyersbergen, Flossie Bogdan, Ian Brace, Frank Brazier (FBr) Phil Browne, Manley Callin, M. Christensen (MCh), Shirley Cohrs, Chris Cowan, Ruth Dixon, Chris Escott, Doug Francis, Mary Gilliland (MDG), Bob Godwin (BCG), Bernie Gollop (JBG), Michael Gollop, Jane Gollop, Chris Harris, Jean Harris (JMH), Wayne Harris, Don Hayward, Dale & Paule Hjertaas, Stuart Houston, John Hubbard, Brian Johns, Sig Jordheim, Edith Kern, Pat Kern, Stuart Keys, Eve King (DK), Bob Kreba (RK), Fred Lahrman, Sheila Lamont, Tony Lang, D. Laing, Moray Lewis, Bob Luterbach, Lola McMiller, Kathy Meeres, Hubert Moore, John Nelson, William Niven, Pat O'Neil, m.ob. many observers, v.ob. various observers, Hazel Paton, Thelma Pepper, Tom Riffel, Annabelle Robinson, Frank Roy, S.M.N.S. Saskatchewan Museum of Natural History, S.N.H.S. Saskatoon Natural History Society, Stan Shadick, Merv Syroteuk, Ruth Tempel, S. & G. Wait, Jim Wedgwood, Gus & Mary Zado (GAZ).

FIRST SIGHT RECORD OF THE CACTUS WREN IN SASKATCHEWAN AND CANADA

GUY J. WAPPLE, Box 1045, Biggar, Saskatchewan, S0K 0M0 and
ALAN R. SMITH, 308-537 4th Ave. N., Saskatoon, Saskatchewan. S7K 2M6

On 15 June 1982, the authors and Linda Lahey were vacationing in the West Block of the Cypress Hills in southwestern Saskatchewan. We visited the home of Bob and Dixie Black, whose ranch is located approximately 42 km (25 mi.) southwest of Maple Creek. While discussing the local birdlife, we asked if there had been any unusual bird species in their district recently. Bob described the following ncident.

Between the hours of 1100 and 1130 on 30 May 1982, during the height of a reak blizzard which struck southern Saskatchewan, Bob was sitting at their kitchen table when he noticed an un-amiliar bird perched outside on the patio. Calling Dixie and two other stormbound visitors to view the bedraggled and obviously disoriented bird, they noted the following field marks:

> size was slightly smaller than a Robin; the head was brown with a wide white eye-stripe; the back was brown with white streaks; the bill was long and down-curved; the breast was densely spotted and the tail barred, with white spots on the outer feathers.

For about 2 minutes they studied the stray from less than 2 m (6 feet) before the bird took flight and struggled off into the storm. No binoculars were necessary, as the bird was much too close for them to have been of any use. Totally baffled by the 'mystery' bird, Bob and Dixie began leafing through the *Audubon Society Field Guide to North American Birds — Western Region*, attempting to locate its picture.[9] When they arrived at picture number 532, the Blacks were amazed to discover that the bird in question had been a Cactus Wren! Bob said the photograph was an exact replica of their bird. When questioned by the authors on 15 June, there was no doubt in the Blacks'

ooking north to Blacks' ranch in Cypress Hills *G. J. Wapple* minds as to the wren's identity. When shown similar species in *Robbin's, et. al.*, they stated it was much larger and more densely spotted below than the Rock Wren; the streaked back and barred tail ruled out both Brown and Sage Thrasher.[7] After the storm subsided on 31 May and on succeeding days Bob and Dixie kept a lookout for the wren, however, it was not seen again.

According to the *A.O.U. Check-List of North American Birds*, the Cactus Wren is a resident of southern California, southern Nevada, southwestern Utah, western and south-central Arizona, southern New Mexico, and central Texas south to southern Baja California, Michoacan and State of Mexico.[1] Based on the northern-most localities given in the text, Toquerville in southwest Utah and the Sheep Range in southern Nevada, the wren was displaced at least 1370 to 1450 km (850 to 900 mi.) north of its desert haunts. A further search of the literature, including reports in *American Birds* since 1967, failed to turn up even a single extralimital record of the Cactus Wren.[2,3,4,5,6,8]

A study of available weather maps of the continent for 30-31 May by the junior author revealed a low pressure system situated over southern Idaho, while a corresponding high pressure mass was located over western Kansas. Our theory, which Bob Black originally proposed, is that after the storm-centre picked up the wren in the southwestern U.S., the resulting northerly flow of air carried it up to the Cypress Hills region. Since the blizzard was a fierce one — winds reaching velocities of over 100 km (60+ mi.) per hour and depositing nearly 2 m (5+ ft.) of snow on the Hills — the wren had no alternative but to follow along until it was able to set down somewhere to seek shelter. Conditions in the remainder of southern Saskatchewan were not as severe. The damage to the province's southwest corner was especially felt on livestock herds. Many animals were buried aliv as they sought refuge in coulees; th depressions themselves were then fille in with snow. When we arrived in th Hills on 14 June, there were still sizeabl banks of snow on the northern slope and many roads remained impassabl Dixie commented on the lack of sma bird-life around the yard after 31 May

Even though this is a sight record b two relatively inexperienced observer the senior author is especially confide of this record, having known the Black since 1976 as careful and cautiou birders. Both are familiar with loca species in and around their ranch. As result, we feel the Cactus Wren shoul be placed on the hypothetical lists fo both Saskatchewan and Canada.

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DOUBLE BROODS OF TREE SWALLOWS IN ONE NEST BOX

DON STILES, 20 Lake Wapta Rise SE, Calgary, Alberta. T2J 2M9 and GRACE NEILL, Box 727, Stettler, Alberta. T0C 2L0

On 13 June 1982, while monitoring on the East Didsbury bluebird trail, Don Stiles, Philip Stiles and Dan Cloutier discovered a Tree Swallow nest with 12 eggs at house No. 143, 20 mi (32 km) east of Didsbury. The eggs were clean and fresh looking and the nest was active with an adult brooding, which was banded. On previous occasions where large numbers of Tree Swallow eggs were found, the nest was unmade, the eggs were dirty and no subsequent hatchings occurred. In this case, on the next monitoring, on 1 July, there were 12 healthy looking young. All were banded. Two days later, they were photographed, and a decision was made to leave all 12 in the nest and not move some to nearby boxes as they seemed to be folding themselves over one another to avoid taking up the whole box. A final check on 20 July suggested all had fledged successfully. Three adults flying around the nest on 13 June and 1 July, and five adults flying around on 3 July lead us to believe it was a multiple effort which fledged the 12 Tree Swallows in one box.

At the September meeting of the Federation of Alberta Naturalists, conversation with Grace Neill of Stettler revealed that she too had found a similar situation.

Tree Swallow

K. Morck

She has just a few nest boxes around her farm, four mi South of Stettler. When Tree Swallows took possession of house No. 7, several birds were seen flying around it. The first egg was found on 15 May. On 30 May there were 13 eggs, with two hens brooding them. Both hens flew. On 12 June, one hen flew out as Grace looked in. The other one was lifted, the eggs counted and the hen put back down on the nest. She stayed there! On 15 June, when Lloyd Lohr came along to see the nest, the eggs were hatching. Lloyd noted then that there was only one male bird near, and concluded that here was a case of polygamy. A few days later three infertile eggs were removed from the nest and the ten young birds left alone for quite some time. When the house was next checked there were the remains of two nearly fully grown birds. The rest, presumably, had flown.

Inquiries revealed that Blake Stillings of Calgary encountered a case in 1978, the first year he started his bluebird trail, where 9 tree swallow young had fledged from a single nest. There were two hens on the nest brooding 9 eggs and a male nearby, suggesting polygamy. Although Blake has built his trail to over 300 boxes, a similar situation hasn't appeared since.

The authors would be interested in learning if others have run across similar double brood situations.

EFFECTS OF A LATE MAY SNOWSTORM ON MOUNTAIN BLUEBIRD AND TREE SWALLOW NESTING

MARY I. HOUSTON, 863 University Drive, Saskatoon, Saskatchewan: S7N 0J8

Each April, with the help of willing assistants, I check the 240 boxes on the actively maintained section of the Saskatoon Junior Natural History Society's Bluebird Trail within 60 km of Saskatoon. Damaged boxes are repaired or replaced to be ready for occupancy by the returning Mountain Bluebirds.

Banding of young Mountain Bluebirds usually gets underway in late May. For example, in 1980 I banded young at 8 nests on 27 May, and at 16 nests on 29 May, continuing on throughout the summer with second nestings in 27 of the 59 boxes used by bluebirds. The last young were banded on 17 July. In a total of 84 nestings, 324 young bluebirds were banded.

In 1981, young from 13 nests were banded on 30 May and those from another 20 nests on 31 May. The last young bluebirds were banded on 21 July. A total of 71 boxes was used by bluebirds and 36 were used for second nestings, for an overall total of 107 nestings and 355 young banded.

In contrast, the 1982 nesting statistics were very different, due largely to the disturbance caused by the unseasonably heavy snowfall (15.4 cm) on 28 May and the subsequent cold days without apparent insects for food. Only 2 bluebird nests survived the storm, with the first bluebird brood of 4 young banded on 7 June, and a second brood of 6 on 16 June. Even these clutches were 1 and 2 weeks late, compared to

1980 and 1981. It was 25 June before bluebirds raised from eggs laid after the storm were ready for banding, nearly 4 weeks late. The peak bluebird banding day for the entire summer on 29 June involved only 5 broods. Fifty-six boxes were used by bluebirds (only 4 had second nestings), for a total of 60 nestings. Only 132 bluebird nestlings were fledged — barely more than a third of the usual number.

Not only were there many fewer nestings, but the success rate was low in 1982. Of the 56 boxes, only 30 fledged young. The average number of young produced per occupied nest was in 1980 3.9, in 1981 3.3, and in 1982 only 2.2.

Tree Swallows normally nest about 3 weeks later than Mountain Bluebirds. The swallows, too, seemed to have been delayed by the inclement weather. All swallows that were just starting to nest before the snowstorm abandoned their attempts and started over again later. Some boxes checked on 7 and 8 June had 2 and 3 eggs, while others had not yet been occupied. The earliest swallow brood had tiny young barely large enough to hold bands on 24 June, and the next broods were banded on 28 and 29 June, about 9 days later than in 1981. Swallow banding did not hit its peak until 9 July. The last swallow banding was on 29 July — 8 days later than in 1981. Although delayed, swallows fledged more young per nest in 1982; 115 nestings yielded 466 young averaging 4.1 young per nest, compared to 143 nestings and 434 young averaging 3.0 young per nest in 1981.

The overall box occupancy rate in 1982, including all species, was 76.3%, compared to 96.3% in 1980 and 92.9% in 1981. The number of boxes totally unused in 1982, 57, was much the highest figure since the trail was begun in 1969.

Mountain Bluebird *Robert J. Long*

1982 SASKATCHEWAN CHRISTMAS BIRD COUNT

From Saturday, 18 December 1982 to Sunday, 2 January 1983, inclusive. Count area should be a circle, 24 km (15 miles) in diameter. This year, bird count forms will be sent to all compilers who submitted counts for Christmas 1981. Anyone else who wishes to send in a count, please write for a form to: Mary I. Houston, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8.

Reports of counts should be sent to Mary Houston as soon as possible after they are taken (by 10 January 1983 at the very latest).

ARTIFICIAL NESTING PLATFORMS FOR FERRUGINOUS HAWKS

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan S7N 0J8

The Ferruginous Hawk, our largest buteo, now occupies a much smaller range in smaller numbers than it did in the early days of settlement. A beautiful and beneficial "gopher hawk," it was once the dominant buteo over the grasslands and over that area kept largely free of trees by prairie fires now known as "parkland." In Saskatchewan, with the ploughing of more and more grassland and conversion to grain crops, the Ferruginous Hawk has persisted mainly in the southern and western parts of the province where there are large government pastures with substantial areas of grassland.[1] [5] It has disappeared from Manitoba.[2] My studies indicate that each pair requires about 2 sq mi of pasture. The pasture must have a high concentration of Richardson's ground squirrels, the main food source of both the Ferruginous and Swainson's Hawks.[7] Unless there are steep hills or cliffs or large stone piles, these pastures must also contain trees for nesting sites. In flat country we have found no nests on pastures that had no trees, though Ferruginous Hawks are known to nest on the ground in flat terrain as well as badlands in South Dakota.[4] [6]

Since 1969 my banding efforts have centered on a 24.5-square-mile pasture near Kindersley, Saskatchewan. Fortunately, Hubert Solverson, the pasture manager from 1960 until this year, kept a watchful, friendly eye on the hawks. No gopher poison was used during his tenure, in spite of pressure to do so from farmers using the pasture. Solverson preferred to rely on the natural gopher-catching abilities of the resident buteos.

The most successful Ferruginous site has been a lone tree near the northeast corner of the pasture. Glen A. Fox (pers. comm.) visited this nest on 15 May 1960 when it contained three eggs; the pair subsequently deserted and the nest was empty on 24 June. Solverson reports that young were successfully fledged from this nest each year from 1961 through 1968, and I banded young each year from 1969 through 1982, a total of 22 consecutive successful years. We do not know how often the adults have changed, but since 1969 there has been one melanistic and one light-phase adult. The only close call was in 1973, when the nest had fallen from the tree a few days before our visit on 23 June. Two of the four young had been crushed beneath the fallen nest, one had been trampled by cattle, and the survivor was banded and replaced in an improved remnant of the nest in the tree. In the 14 years that I have visited this single nest, 50 young have been raised. This must be an unusually good territory and these hawks must be exceptionally good hunters.

We became concerned about how long this, the only tree for more than a mile in any direction, might survive. Its roots are exposed by multitudes of cattle rubbing against the tree and trampling a depression around its base (Fig. 1). We watched as other trees in deserted, deteriorating and uncared-for shelter belts containing heavy Ferruginous nests were similarly weakened by cattle and blew over in high winds (Fig. 2). These trees are a great attraction to the cattle who use them for rubbing and for shade. We thought of placing rock piles at the base of each nest tree, but Solverson vetoed this idea, as a potential hazard to the cattle, who might break their legs. We considered fencing the

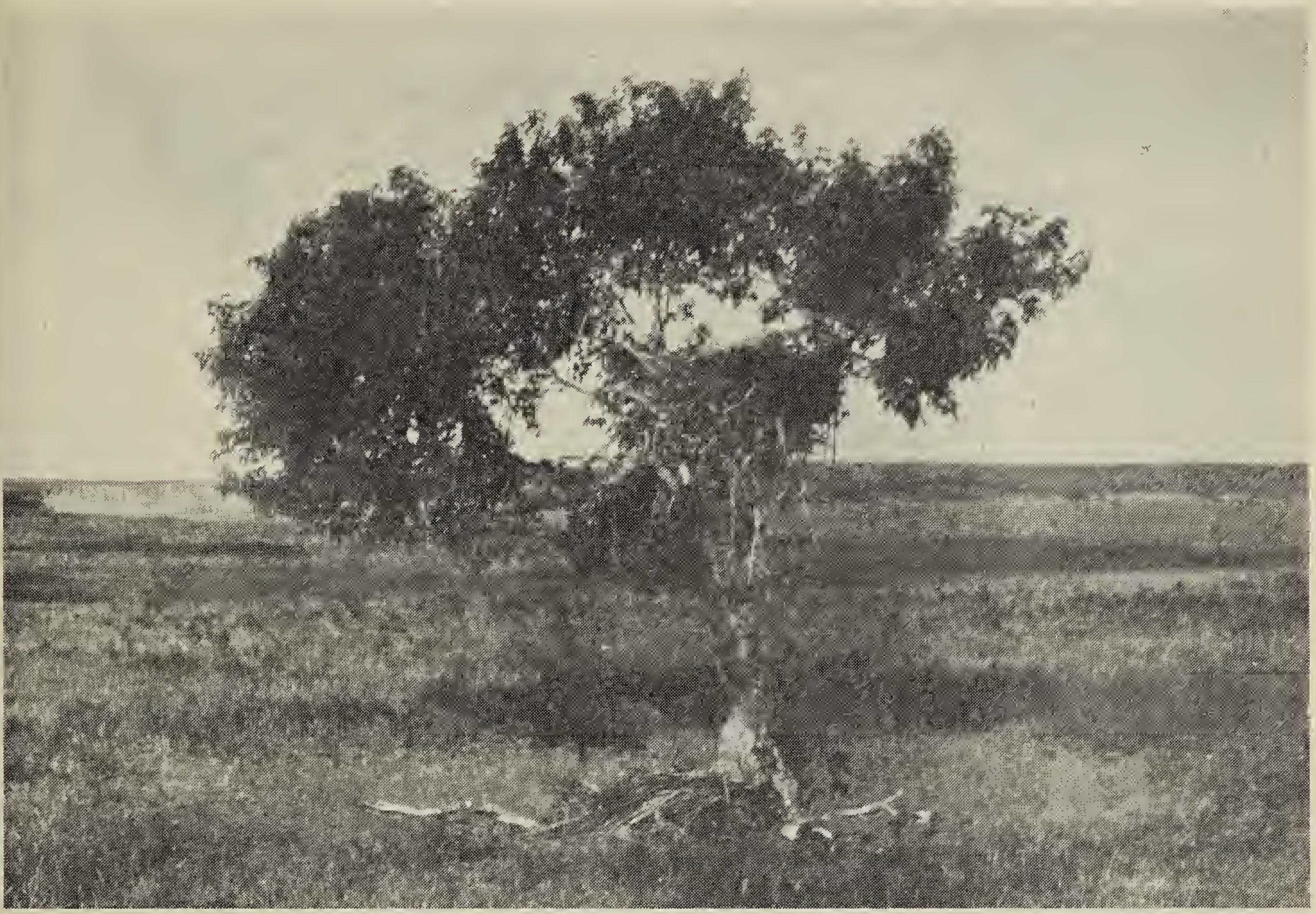

Fig. 1 Solitary maple tree with successful Ferruginous nesting for 22 consecutive years.
C. S. Houston

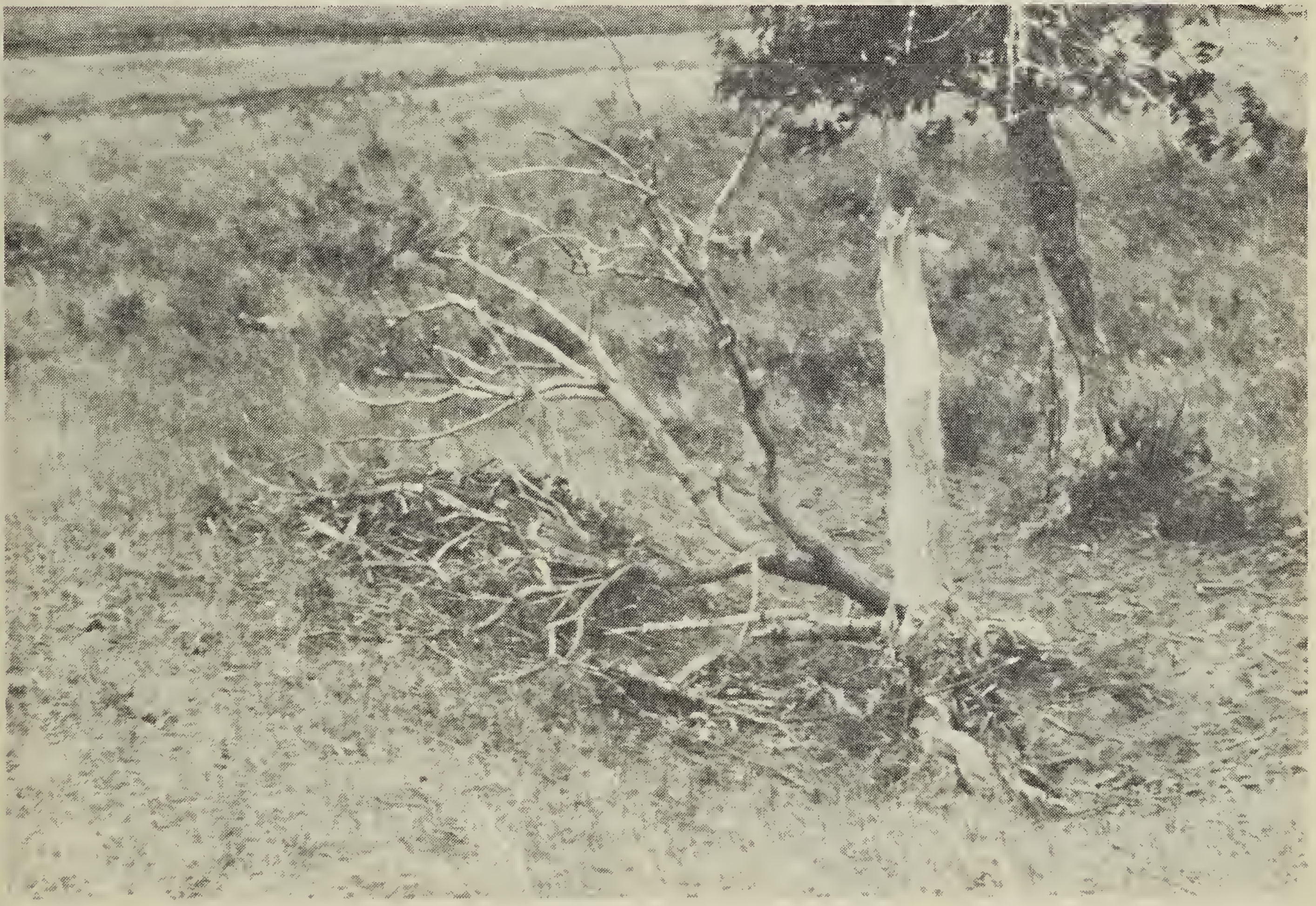

Fig. 2 Broken tree with Ferruginous nest on ground. Failed nesting for that year.
C. S. Houston

remaining shelter belts on the pasture, but Solverson wished the cattle to have access to the shelter and shade they provided.

I then enlisted the help of Keith and Jean Harris in providing the best of the remaining solutions — nesting platforms. On 28 October 1972, in a snowstorm, Keith, Jean, Mary and I put up the first six experimental nest platforms. Keith had persuaded the Saskatchewan Power Corporation to donate the poles, which he cut in half. He also supplied at no charge two trucks, a long trailer to carry the poles, and a backhoe. At each site, Keith dug a hole nearly six feet deep, then we placed the pole upright and pushed in dirt around it. Keith lifted me up in the backhoe bucket to hammer on the platform in solid safety. Since this was an experiment, we placed large tractor tires on two poles, and filled them with sticks. On two others, we placed the bottoms of large oil drums (Fig. 3). On the final two, we placed shallow wooden boxes, each 30 inches square. Each was the right height for banding and photography purposes, being five feet above the roof of my 4-wheel-drive vehicle (Fig. 4).

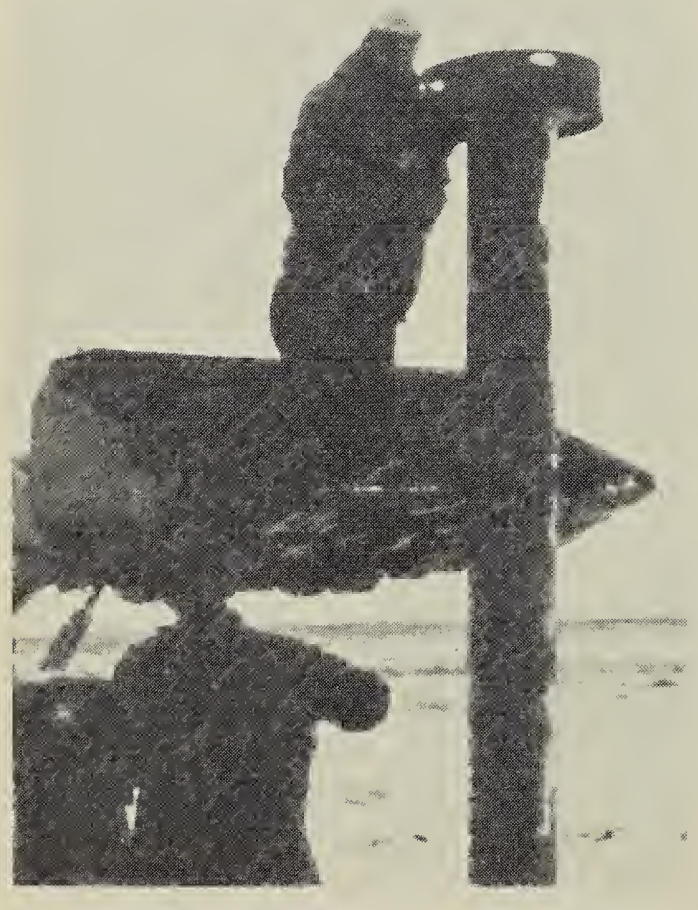

Fig. 3 Placing of unsuccessful oil drum platform. *C. S. Houston*

In 1973 our June visit was a disappointment. No hawks had used the poles. In 1974 and 1975, Hubert Solverson reported that a pair of hawks had taken up residence on pole No. 3, but both years they had deserted by the time of our visit in mid-June. However, the same pole, with a wooden box, was used successfully by a pair of Ferruginous Hawks in 1976 and we banded three young on 19 June. Although our sample was too small to prove that wooden boxes were preferred, we decided that in spite of the sticks separating the metal of the drums and the rubber of the tires from the center of the nest, that perhaps the metal and rubber became too hot in the mid-day sun. On 24 October 1976 Gerhard Stuewe, Bruce Donovan and I went out and replaced the tires and oil drums, substituting four more shallow wooden boxes.

We were pretty excited in 1977, the first nesting season following our changeover, to find three of the six boxes in use by Ferruginous Hawks, which raised three, three and one young, on poles 2, 3 and 5. This did not prove to be as good an omen as it seemed, for 1977 was the only year with three successful nests. In 1978, a Ferruginous Hawk raised three young on pole 2 and a Swainson's Hawk raised two young on pole 5. In 1979, four poles were occupied at our first visit, but the Swainson's Hawks on poles 3 and 5 were both unsuccessful, while Ferruginous pairs raised three and four young respectively on poles 2 and 4. Poles 2 and 4 continued in use by Ferruginous Hawks, and raised two and three young in 1980 and two and four young in 1981. In 1982, all previously used boxes were unoccupied for reasons unknown to us, but pole 1 was used for the first time by a pair of Swainson's Hawks that were still incubating an addled egg on 25 July.

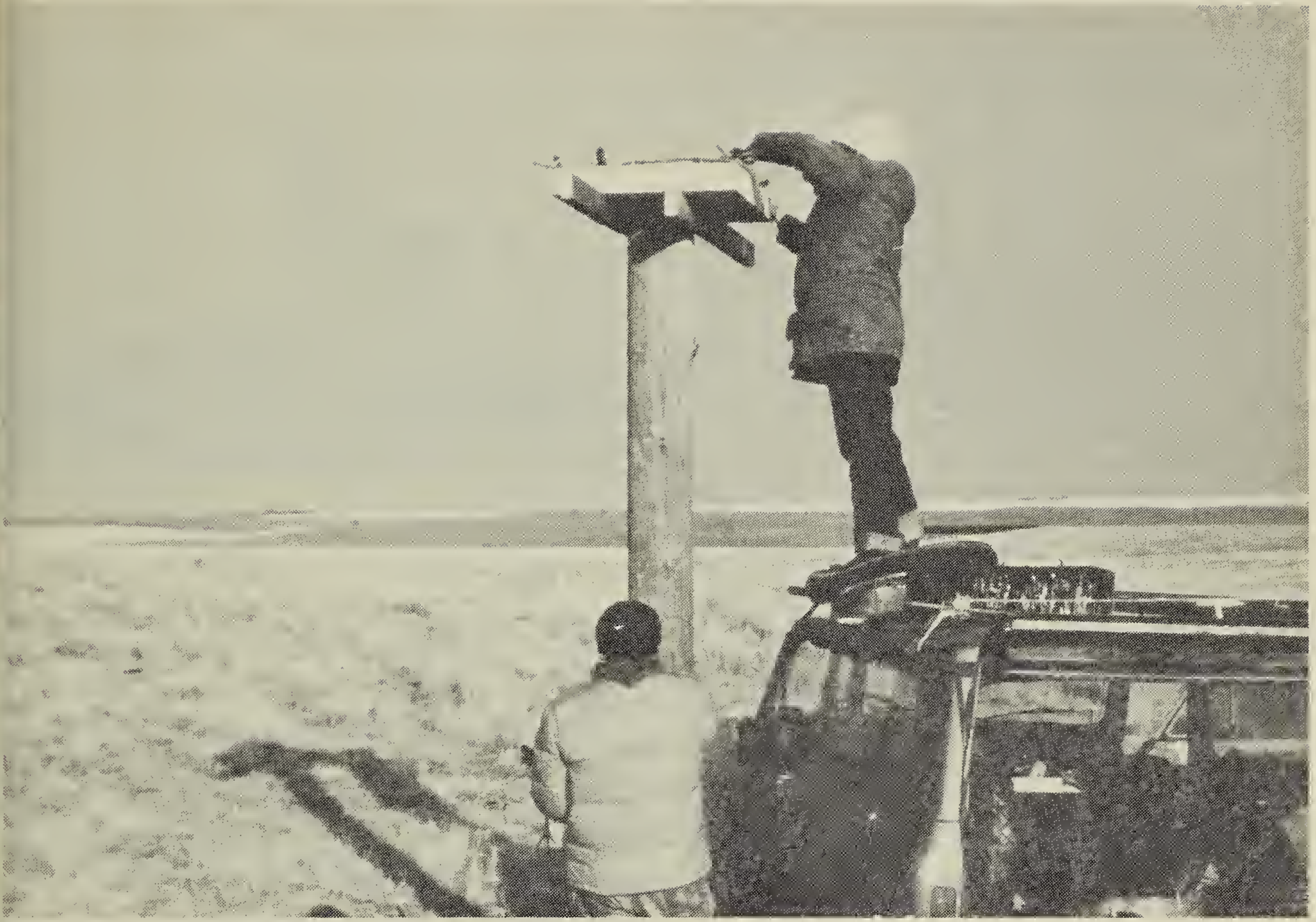

Fig. 4 Wooden box as nesting platform *C. S. Houston*

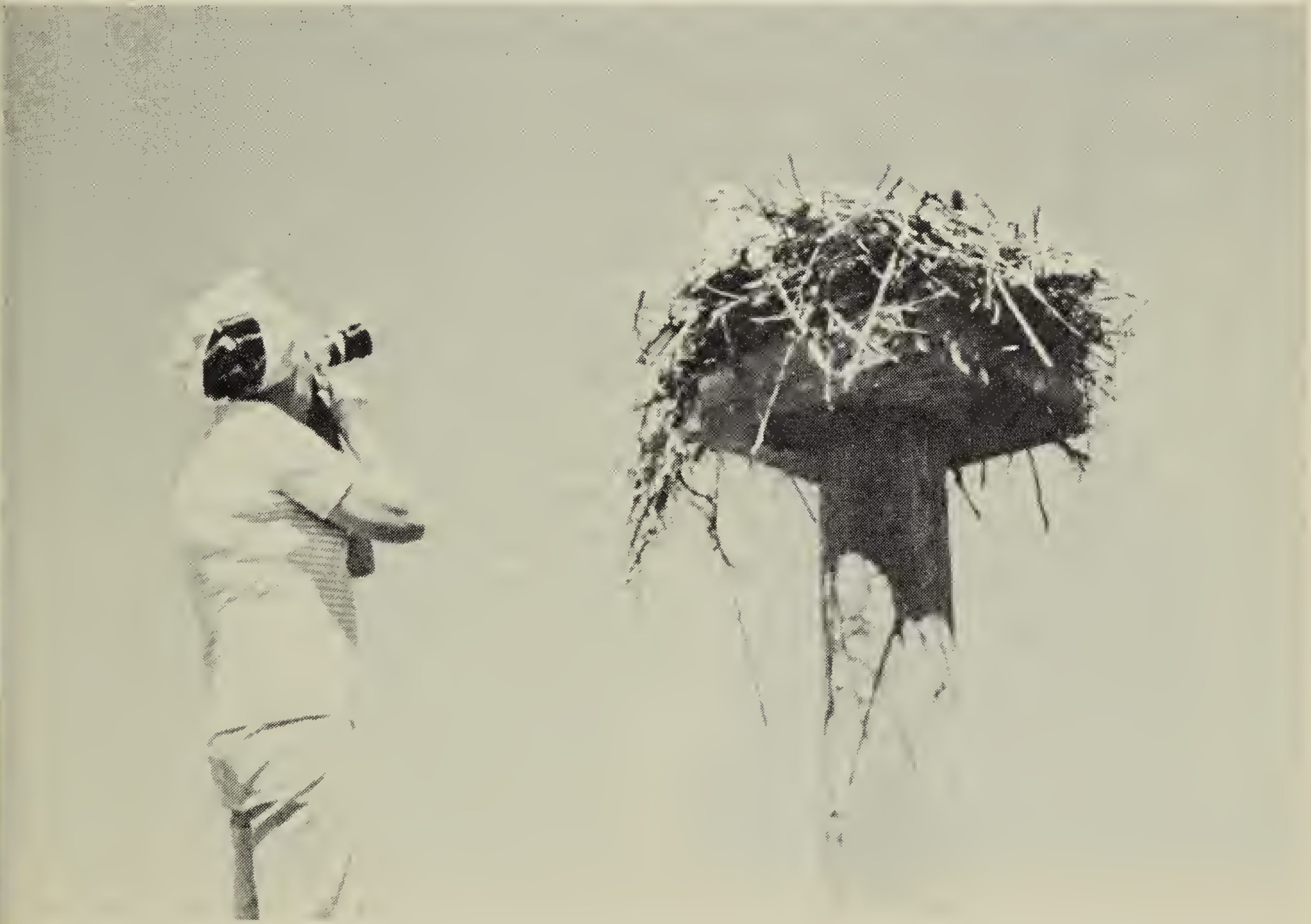

Fig. 5 Jean Harris, on roof of vehicle, photographing young Ferruginous Hawks on nest platform. *C. S. Houston*

In all, 26 young Ferruginous Hawks have been fledged from our pole nests in 11 nestings, only two nesting attempts were unsuccessful, both of these in the first two years (Figs. 5, 6, 7). Only two Swainson's Hawks have fledged from four nesting attempts. Five of the six poles have been occupied at least once. The sixth is within the territory of the lone tree mentioned above, and is in readiness for the year that the tree topples over.

On 12 September 1982 Keith and Jean again placed about $200,000 worth of equipment at our disposal, and donated their services for the day. Each drove one truck. Keith had purchased a dozen telephone poles for $6 each. The Saskatchewan Natural History Society paid for the lumber, which was cut in advance by Dick Ehman and the boxes were built by Kelly Wylie, Doug and Cathy Tomlinson. The Saskatoon contingent of Kelly Wylie as master carpenter for the occasion, Nigel Caulkett, Alan R. Smith and Cathy Tomlinson left with me at 6:30 a.m. With permission of pasture manager Ed Melchior we placed three poles at 1-mi intervals on the 18-sq-mi east block of a pasture that has no trees at all. Ferruginous Hawks have nested successfully for years in trees just outside the southeast corner of this pasture. Each of the boxes was filled with sticks, a central depression was made for the nest, and the sides were ornamented with cow-dung — in nature the sure-fire sign of Ferruginous occupancy. We placed another three poles in the 14.5-sq-mi west block of this pasture, which has only one or two clumps of trees in a coulee. After Jean served us a delicious beef supper, we placed the last two poles in the smaller treeless extremities of a 5-sq-mi pasture not far from the Harris' rural home.

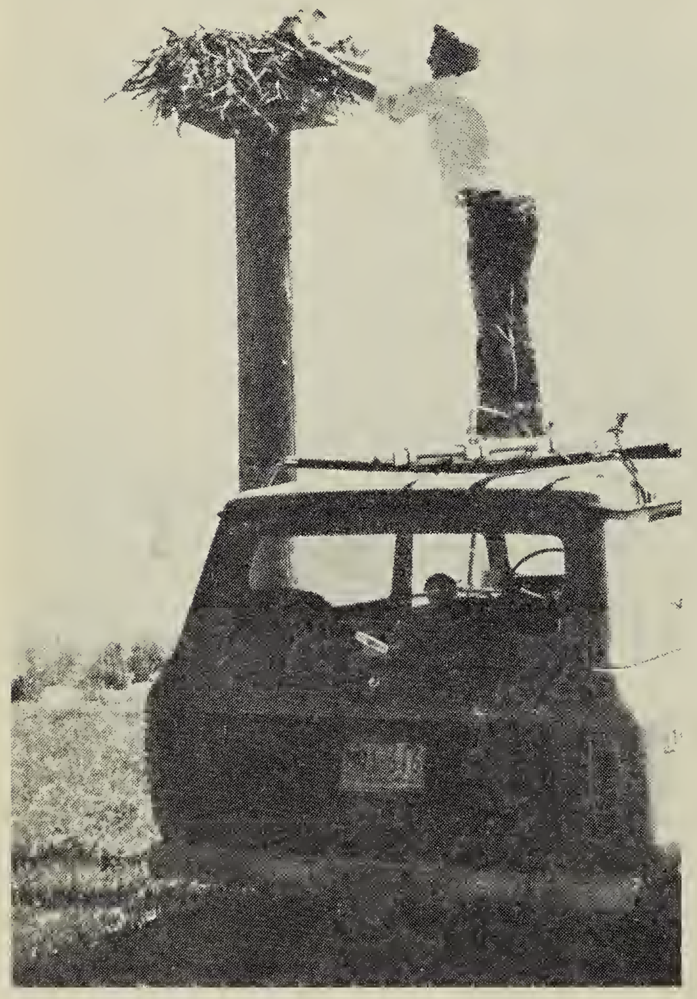

Fig. 6 Stuart Houston banding young Ferruginous Hawks from roof of vehicle. Jean M. Harris

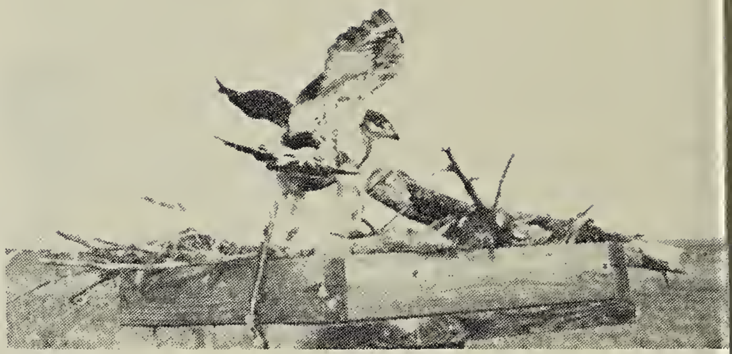

Fig. 7 Young Ferruginous Hawks on nest platform, ready to fledge. C. S. Houston

The 1972 experiment has been a success. It is small in comparison with the Canadian Wildlife Service project near Brooks, Alberta, under the direction of Richard W. Fyfe. They placed 98 poles on pastures and of these about 16 have been used (Alan R. Smith, and J. K. Schmutz, pers. comm.). Ferruginous Hawks are accustomed to nesting in exposed positions on hillsides and the lack of shade seems not to be a

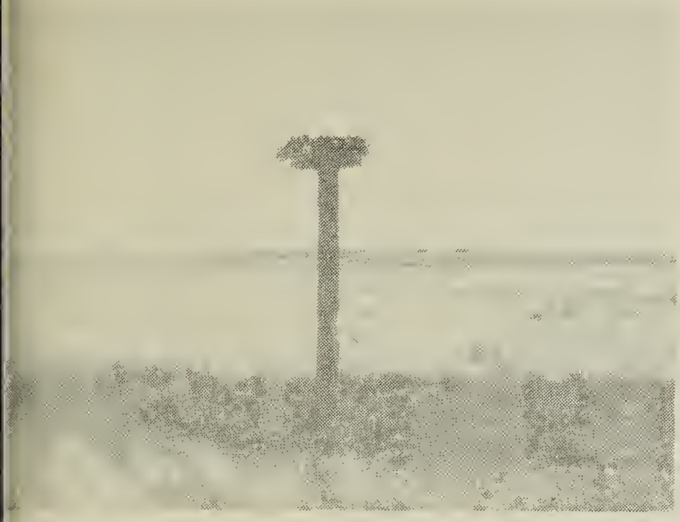

Fig. 8 *Pole with nest platform — vista of open pasture.* *Jean M. Harris*

detriment, although Keith Harris built one nest platform this year with slat sides to provide some shade.

Our success is especially impressive because the poles were added to a pasture that already had an incredibly high density of four to six pairs of Ferruginous Hawks, a ratio of 1 pair per 4.1 to 6.1 sq mi or 10.6 to 15.9 km^2, apparently the highest density recorded anywhere. Lokemoen and Duebbert had one pair per 17.4 km^2 on their study area of prime habitat in South Dakota.[6] With the addition of nesting platforms in the treeless portions of this pasture, three pairs used poles in 1977 and the number of pairs increased to nine, all successful, a ratio of one pair to 2.7 sq mi or 7.1 km^2.

It is fortunate indeed that Keith Harris owns and operates an oil well service company that has the equipment we need. It is even more fortunate that Jean is a dedicated bird watcher who has been finding hawk nests for me for 13 years and a photographer who has won numerous prizes in competitions. In 1982 Jean located 41 nesting pairs of Swainson's Hawks in her area, and I banded 50 young in the 24 nests that were successful.

The equipment provided by Keith would rent for $92 an hour. If he was reimbursed, total costs would be in the neighborhood of $100 for each nest platform. This is roughly the same as the $113 estimated for similar platforms in Alberta by Richard Fyfe.[3]

To prevent a further decline in Ferruginous Hawk numbers in years to come, retention of habitat is of first importance and we must preserve as much pasture as possible. We must also ensure that nesting sites are available. When these are lacking, nest platforms offer a suitable alternative to natural trees.

[1] ARCHIBOLD, O. W., and M. R. WILSON. 1980. The natural vegetation of Saskatchewan prior to agricultural settlement. Canadian Journal of Botany 58:2031-2042.

[2] BECHARD, M. J. 1981. Historical nest records for the Ferruginous Hawk in Manitoba. Canadian Field-Naturalist 95:467-468.

[3] BRIDGES, J. M. 1980. Raptor nesting platforms and the need for further studies. Presented at a workshop on raptors and energy developments at Boise, Idaho, Reading: Gilbert-Commonwealth Engineers-Consultants, 5 pp.

[4] BLAIR, C. L., and F. SCHITOSKEY, Jr. 1982. Breeding biology and diet of the Ferruginous Hawk in South Dakota. Wilson Bulletin 94:46-54.

[5] HOUSTON, C. S. 1977. Changing patterns of Corvidae on the Prairies. Blue Jay 35:149-155.

[6] LOKEMOEN, J. H., and H. J. DUEBBERT. 1976. Ferruginous Hawk nesting ecology and raptor populations in northern South Dakota. Condor 78:464-470.

[7] SCHMUTZ, J. K., S. M. SCHMUTZ, and D. A. BOAG. 1980. Coexistence of three species of hawks (*Buteo* spp.) in the prairie-parkland ecotone. Canadian Journal of Zoology 58:1075-1089.

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OBSERVATIONS OF THE BLUE JAY

JEAN BANCROFT, 306-200 Tuxedo Ave., Winnipeg, Manitoba. R3P 0R3

As the Blue Jay is one of the most beautiful and interesting of birds, I have always been intrigued by it. But I had never been able to observe an entire nesting period of this bird until the summer of 1982.

In early June at our summer cottage at Whytewold on Lake Winnipeg, I noticed a pair of Blue jays endeavouring to snap off thin twigs from the hazelnut bushes. I had at one time seen a Blue Jay's nest with toilet paper hanging from beneath it; I subsequently hung some lengths on bushes in our yard. The attraction worked, and I was able to watch the direction in which the birds flew, and I found the nesting site about 60 m down the lane. The nest was built in the crotch of several vertical offshoots in a giant oak, approximately 6 m from the ground. It was difficult to see as it was concealed by twiglets and foliage. In addition, my viewing was complicated by the fact that the tree stood directly in front of a cottage which had just become occupied. The nest was bulky but compact and was about 17 cm in outer diameter by 10 cm deep. According to Bent "the inner cup measures about 3½ to 4" (8.9 cm to 10.2 cm) in diameter by 2½" (6.4 cm) in depth."[1]

I watched the birds carry many twigs, paper, rootlets, as well as moss, lichens and silken webs from the nest of a Least Flycatcher. (Much to my disgust, the jays pulled apart the flycatcher's nest which she was in the process of constructing.)

I was not able to determine the number of eggs in the nest but there are "usually 4 to 6; buffy to greenish or bluish with small spots and blotches of

Blue Jay *W. C. Harris*

brown or olive. Incubation period is 17 to 18 days".[1] As the sexes are similar I was not able to ascertain if both took part in the incubation; Bent claims that they do, "each relieving the other at more or less regular intervals," but Colin Harrison says "incubation by female alone, fed by male."[1 4]

On 15 June I first noticed a bird sitting on the nest. I observed the nest on several occasions, and on the 26th both male and female flew away from the site. On the 27th they both came to our feeder and birdbath. While around the nesting site they had, up to this time, been very quiet, but on 1 July I heard the joyous yodelling call, "too-wheeoodle, too-wheeoodle." In the early spring I had seen a jay using this call to serenade a female which was sitting on the upper branch of a tree with six other jays. The bird moved its whole body up and down like a teeter-totter.

At the back of our yard on 8 July I heard a great cacophony from jays screaming and several smaller birds giving alarm calls. Because I had been observing nearby nests of Red-eyed Vireos, Northern Orioles, and Tree Swallows, I began to wonder if the jays had predated any of these nests, as they were all fairly close together. Upon hurrying outdoors I found a jay on the ground tearing apart a nearly-fledged young bird. I presumed it was a Red-eyed Vireo nestling because the vireos were in a dreadful state for at least two hours, calling incessantly. The jay must have plucked all the young vireos from their nest because, shortly thereafter it was empty. The jay finally flew to its nest with the remains of a nestling. A similar observation is alluded to by Bent.[1]

On 17 July an adult came to pick up bread at our front feeder and it flew towards the nest site. Two days later I observed three fair-sized nestlings being fed. On several occasions, from 23-29 July, both adults flew around and in and out of surrounding trees, giving alarm calls, "jay, jay, jay", and on 30 July the three fledglings were flying around the trees, shouting almost as loudly as their parents — a large gray squirrel was close at hand.

It was exciting to watch the parents and fledglings come to our feeder. The young ones were almost adult size except for their tails. They gave a perpetual repetitive squawking as they spread their wings and opened their beaks simultaneously. The parent picked up one sunflower seed at a time and placed it between its toes while it picked off the outer shell. Later on the hazelnuts and acorns received the same treatment. On several occasions I noticed an adult flew away with some food in its beak. This is quite a usual procedure, according to biologist and writer, John Dennis. In his book he further states "usually much more is tucked in an enlargement of the throat known as the craw or gullet."[2]

On 8 August I was delighted to find that there were two new fledglings, stub-tailed, in the backyard bushes, making five in all. The whole family returned on 28 August to our front yard feeder. Above all, it was delightful to see the whole family at the birdbath taking turns splashing about. A similar incident is reported in Bent.[1]

During the time that the jays were coming to the feeder, there was an Eastern Wood Pewee tending her little brood in a nest approximately 6 m. from the ground in an old oak tree close by. Both male and female pewees expressed great apprehension on numerous occasions and they gave the jays quite a difficult time by performing aerial dives and attacking the jays' heads. Also a pair of House Wrens was kept on the alert when frequently a jay flew with food to a branch close to the one from which the wrens' nest-box was hanging; there were many alarm calls all round.

When the jays came to the feeder (always sounding their harsh alarm calls) other birds disappeared. As John

Dennis points out, "this is a ruse that usually clears out the competition and gives jays free access to the food." His observations also indicate that "the role of jays as sentinels was especially apparent. . . . There can be no doubt that jays exert an influence on the bird community far beyond their numbers. Their alarm notes both save lives and cause confusion. This is true not only at the feeding station but also in the wild."[2]

As Blue Jays can frequently be seen all winter in Winnipeg and Whytewold, maybe our family of jays will not migrate either, but will choose to seek shelter in a giant spruce tree. At any rate, it is hoped that a pair will nest again in th vicinity of our cottage in the summer o 1983.

[1] BENT, C. 1946. Life histories of Nort American jays, crows and titmice Bulletin 191, Smithsonian Institution Washington.

[2] DENNIS, J. V. Beyond the bird feeder. A A. Knopf, Inc.

[3] GODFREY, W. E. 1966. The birds o Canada. National Mus. Canada Bull 203, Queen's Printer, Ottawa.

[4] HARRISON, COLIN. 1978. A field guide t the nests, eggs and nestlings of Nort American birds. Collins, London.

Red-eyed Vireo nest *Chris Adam*

MULTIPLE PARASITISM OF BREWER'S BLACKBIRD NEST

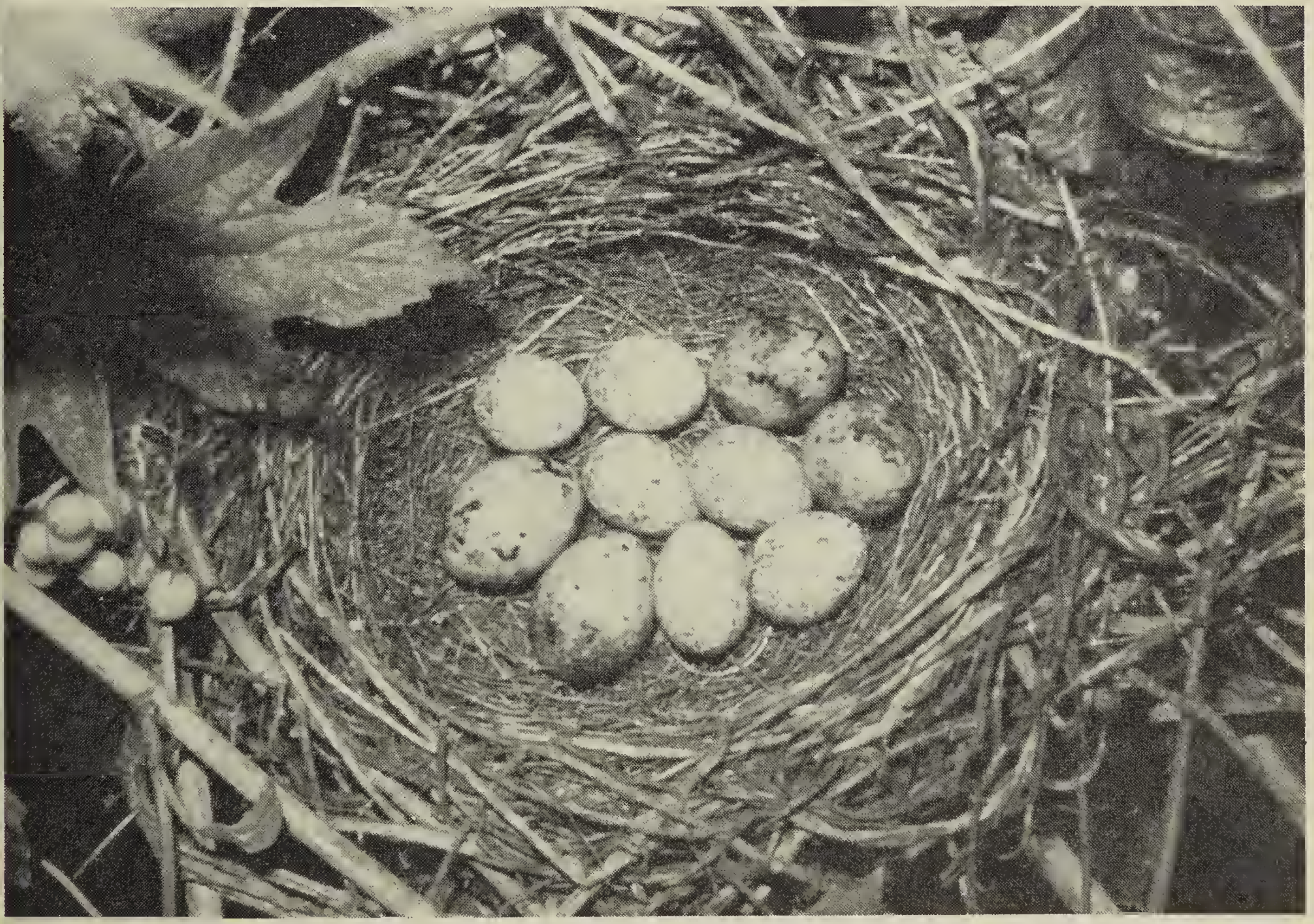
VIC HARPER, R.R. 2, Saskatoon, Saskatchewan S7K 3V5

Brewer's Blackbirds nest freely in our hedges and windbreaks, mostly in deciduous shrubs but occasionally in young spruce. About 10% of the nests contain a cowbird egg.

The Prairie Nest Records Scheme data up to mid-1975 reveals that of the records of 371 nests of Brewer's Blackbirds there were 85 instances or 22.9% of parasitism by Brown-headed Cowbirds.

On 3 June 1979 I found a Brewer's Blackbird nest 1.5 m from the ground in a High-bush Cranberry. It contained one egg. The next day there were three, one of which was a cowbird's. Next day there were six, three of which were cowbirds' and next day I found ten, six of them being cowbird eggs. The blackbird had started incubation.

Thinking this very unusual I monitored the nest every second day and the count remained the same. On the 13th day of incubation I found them all hatched. Eight days later I had to remove some chicks in order to take the census — they were all accounted for and looked healthy and happy. The nest was so full that I refrained from further enumeration for fear that some might fledge prematurely. I feel that all eventually fledged successfully.



Brewer's Blackbird nest *Vic Harper*

STRANGE BEHAVIOR OF A RUBY-THROATED HUMMINGBIRD

MARK A. BUETTNER, 2025 Corydon Ave., Winnipeg, Manitoba. R3N 0P5

On 2 August 1982, the weather at Victoria Beach, Manitoba was dreary and overcast with occasional showers. At about 1830 h I was looking out the cottage living room window when a hummingbird came to check the impatiens flowers. The window flower box is 5 feet long and the bird visited several flowers along it.

I was very intrigued with this small bird as I had never been that close to one before. After the bird left the flower box it flew over and landed on a branch of an evergreen tree; its wings were still humming. After about thirty seconds, its wings stopped moving and it tipped over backwards, still hanging on to the branch.

After a few seconds, I thought it must be in trouble, so I went out to investigate. It seemed dazed and offered very little resistance when I picked it off the branch. Its eyes were still partly open but it appeared to be in convulsions. Every 2-3 seconds its whole body jumped.

My mother-in-law said that a friend of hers at Wanasing Beach had seen a hummingbird in difficulty and thought that there was an excess of nectar built up on its beak. She thought that this was causing its beak to be gummed up. It appeared to recover after they cleaned it off.

This bird had a moderate amount of nectar about 2/3 the way up the beak but it did not appear to be causing any problem. I cleaned the beak off and put some water in a teaspoon to offer it a drink.

The little bird's eyes were closed, its feet were totally relaxed now but the body continued to jump every 2-3 seconds. It did not look good. After holding it for a few minutes, I thought it may be more relaxed in a natural setting. I placed it on the warm ground beside a plant in a small flower pot just outside the door. We checked it intermittently for about eight minutes. The above symptoms continued.

We were sitting chatting when my father-in-law said "There's another hummingbird in the flower box." I jumped up to check the one in the plant pot and it was gone. So it was probably the same one. Seven other people witnessed this incident.

EASTERN BLUEBIRD NESTBOX REPORT

L.A. SMITH, 481 Vaughan Road, Apt. 303, Toronto, Ontario M6C 2P6

There were 122 nestings documented. Of those, 110 fledged some young. This was five more than were successful in 1981. We found boxes where the bluebirds had come and gone and the nest was used, with no disease or attacks by mammals. Boxes used were 126 out of 500.

Raccoons are the greatest problem. We can stop their attacks by using posts 100 inches long and digging them in for the full depth of a garden spade. About 200 posts need to be replaced. Thus, it may be May of 1984 before everything is perfect in this regard.

Blowflies can be controlled by Fossil Flower insecticide, if the weather is dry. We may have to use paper towels in wet weather, or as a back up system.

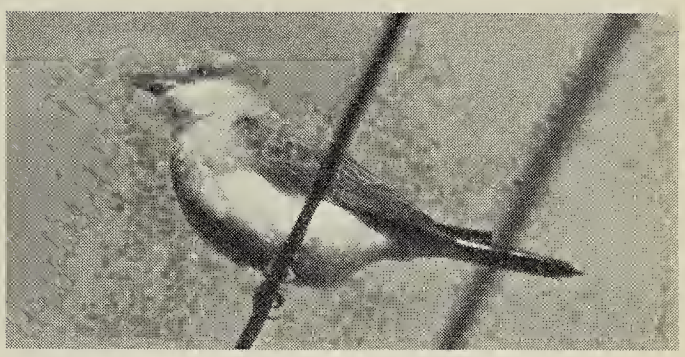
The failure rate was about 8%. The desertions and disappearances of eggs and newly-hatched young is a great puzzlement. I would gladly listen to your theories.

WESTERN KINGBIRD NESTING IN ABANDONED FARMHOUSE

WILLIAM H. KOONZ, Wildlife Branch, Manitoba Dept. of Natural Resources, Box 14, 1495 St. James St., Winnipeg. R3H 0W9

At midday on 22 June 1982, I visited an abandoned farmyard 2.6 km south and 1.6 km west of the village of Lyleton, Manitoba. I was pleased to see a pair of Say's Phoebes in the vicinity and entered the house hoping to find their nest. I did find several Barn Swallow and House Wren nests; the only indication of Say's Phoebe activity was an old nest on a shelf above the basement steps. The decrepit condition of the house prohibited a complete nest search. The second story of the house contained four rooms. In the middle of the northwest corner room was a ceiling lamp shade some 1.5 to 3 m from the outside wall. This semi-clear glass lamp shade was held to the ceiling by three strands of brass chain. Inside the lamp shade (the bulb being broken) was an active Western Kingbird nest with four large young. The glass in the room's upper west windowpane was intact; the adult birds twice escaped out the vacant lower window section. The south window, which did not contain glass, was accessible through an open doorway into the upper southwest corner room. The nest site was of interest because it was inside a building and because it was quite free, swinging easily to the touch. Brian Ratcliff, a co-worker, accompanied me on a return visit that evening, confirming the Western Kingbird nest with at least four young. Bent describes the Arkansas (Western) Kingbird as most adaptable in nest site selection, often choosing insecure situations.

BENT, A. C. 1942. Life histories of North American flycatchers, larks, swallows, and their allies. U.S. Natl. Mus. Bull. 179 (Dover reprint, 1963).



Western Kingbird *F. W. Lahrman*

XIX INTERNATIONAL ORNITHOLOGICAL CONGRESS ANNOUNCEMENT

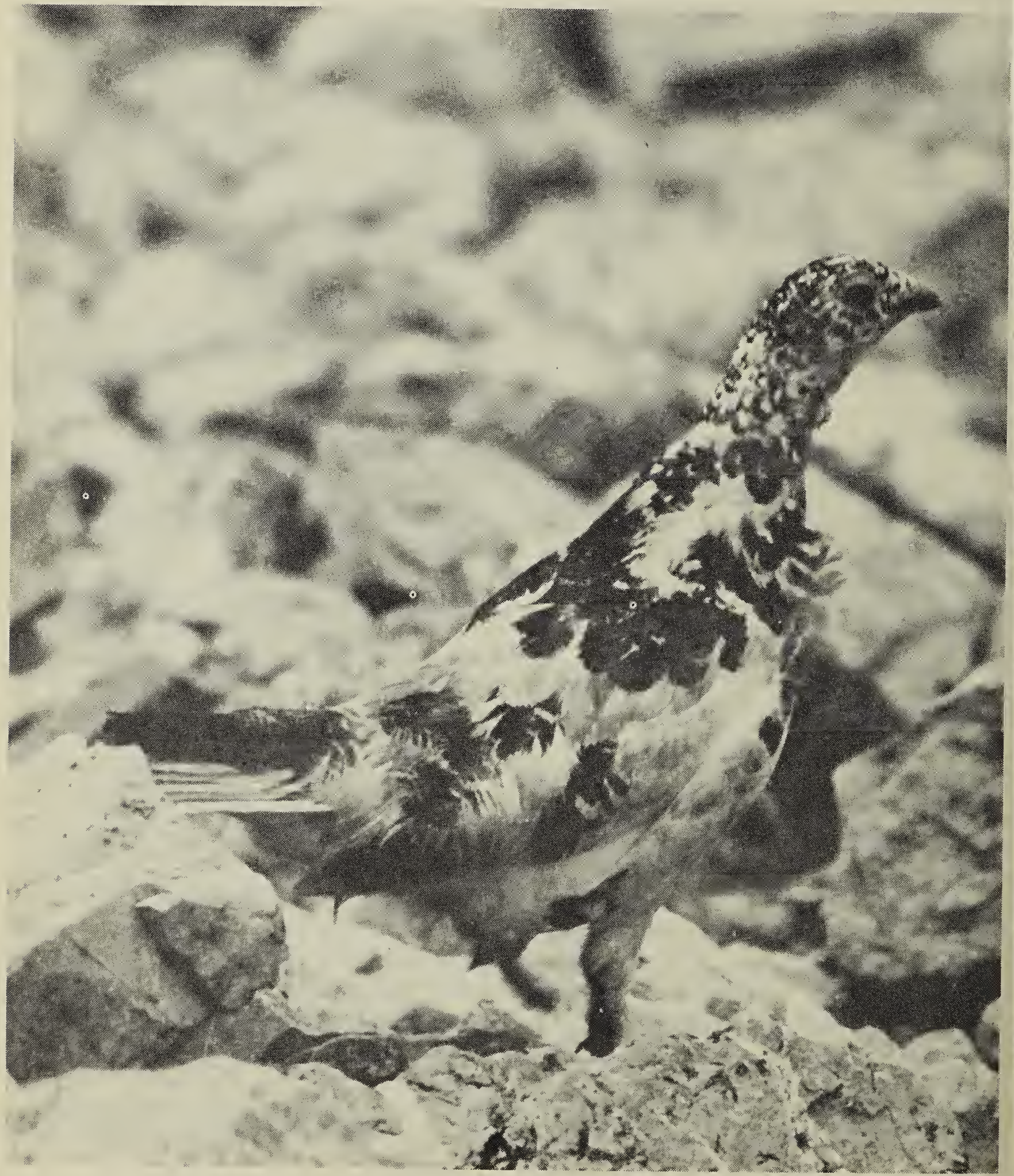
At the XVIII International Ornithological Congress in Moscow the International Ornithological Committee accepted the invitation of the National Museum of Natural Sciences of Canada and of the Canadian ornithological community to hold the XIX Congress in Canada. The Congress will be held in Ottawa, Canada, from 22-29 June 1986. It elected Dr. Prof. Klaus Immelmann (West Germany) as President of the Congress. Dr. Henri Ouellet (Canada) was designated as Secretary-General.

Details about the general and scientific programs, field excursions, and other activities during the Congress will be available later.

Those interested in participating in the Congress are urged to inform the Secretariat in order to obtain announcements and application forms. Correspondence should be addressed to The Secretary-General, Dr. Henri Ouellet, XIX Congressus Internationalis Ornithologicus, National Museum of Natural Sciences, National Museums of Canada, Ottawa, Ontario, Canada, K1A 0M8.

WHITE-TAILED PTARMIGAN

Photographs by *Geoff Holroyd*, Box 1343, Banff, Alberta. T0L 0C0



ROAD-KILLED RIVER OTTER NEAR WANDERING RIVER, ALBERTA

MIKE MYCHAJLUK and ERIC WATTON, 2616 11th Ave. S.E., Calgary, Alberta T2A 0E3

The River Otter (*Lutra canadensis*) is not very abundant in Alberta. Present day distribution and numbers are noticeably reduced compared to historical accounts.[3] In the past otters were found throughout the mixedwood forest of northern and western Alberta, but according to Soper were never common. Even as early as 1900 otters were relatively scarce over much of Alberta.[3] Don Reid (pers. comm.), University of Calgary, states that otters are fairly common in the area between Wandering River and Mariana Lakes.

Otters tend to occur in remote areas and therefore are not observed very often. In remote areas they are reported to be most active in the early hours of the morning and in the late afternoon.[1] Rue found otters active at any time of the day.[2] Don Reid, in his study area, has observed otter activity at all times of the day.

On 9 August 1980, while driving south on highway 63 we came across a road-killed river otter. It was a 9 kg female. The location was approximately 30 km north of the town of Wandering River. The time was between 0800 and 0900 hours. The habitat where the otter was found can be described as a Sphagnum moss-Black Spruce bog with a creek running through it.

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[1] BANFIELD, A. W. F. 1974. The mammals of Canada. National Museums of Canada, University of Toronto Press, Toronto, 438pp.

[2] RUE, L. L. 1967. Pictoral guide to the mammals of North America. Thomas Y. Crowell Company, New York. 299pp.

[3] SOPER, J. D. 1964. The mammals o Alberta. Queen's Printer, Edmonton 402pp.

NORTHERN RACCOON RECORDS

WALTER KRIVDA, P.O. Box 864, The Pas, Manitoba. R9A 1K8

For unknown reasons some southern animals are spreading farther north. The case of the Raccoon is a good example of this. From time to time there have been sight records of the Raccoon in the The Pas area. Positive specimens are, however, another matter. I was, therefore, pleasantly surprised to receive a Raccoon skull taken at Sipanok Channel, Saskatchewan (about 60 miles west of The Pas) by trapper Jack Grimsky in 1950. The skull was given to me by Phil Reader of Reader's Lake who has preserved it all these years. The data was pencilled on the skull which may well have been cleaned by the late Sam Waller as the word "Raccoon", inked on the skull, is in his hand. He was boiling and cleaning many skulls in the late 1940's and early 1950's for his museum which was then on the Indian Reservation at The Pas. The skull is slightly broken and the saggital crest is also chipped. It will be preserved in the writer's collection at The Pas.

In further discussing this skull with Mr. Reader, who at the time was Inspector of Registered Trap Lines for the area, he mentioned an earlier record of a Raccoon for northern Manitoba. A Raccoon was taken by a trapper at Thicket Portage on the Hudson Bay Railway about 1948. This is about 170 miles northeast of The Pas. This record was reported in "The Pas Northern Mail" at the time.

UNUSUAL ENCOUNTER BETWEEN A WHITE-TAILED JACK RABBIT AND A HAWK

TAMMY COLLINS, Pilot Mound,
Manitoba. R0G 1P0

While operating a tractor on the family farm (Sec. 19, Twp 3, Rg. 13, W1) at Rock Lake, Manitoba on 2 June 1982, I flushed an adult jack rabbit which ran in the general direction of a large buteo hawk (species unidentified) sitting on the field ahead. The hawk immediately took to the air and flew at a height of approximately 30 feet to intercept the rabbit. The rabbit accelerated rapidly as the hawk approached from the side. Once near the rabbit, the hawk turned in behind its prey and dropped down to approximately 7 feet above its head. Without breaking stride, the rabbit jumped up head first, almost reaching the hawk. The hawk rolled onto its back to avoid its aggressor, lost air under its wings, and fell backwards to the ground. The rabbit continued on to some wooded cover while the hawk rolled back onto his feet, not moving off until the rabbit disappeared.

1982 SASKATCHEWAN CHRISTMAS MAMMAL COUNT

Reports of mammals seen during bird counts will be compiled again this year. When on Christmas Bird Counts please note the number of each species of mammal seen, and note species whose tracks you can positively identify.

Send mammal counts with your bird counts as soon as possible (no later than 10 January 1983) to Mary I. Houston, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8.

JUNIOR NATURALISTS

WHO . . . WHO . . . KNOWS . . .?

Tamara Klinger, grade 8, Sedley, wrote to Dr. Stuart Houston the following letter about owls. Read it carefully so you can answer the questions at the end . . .

Hi! My name is Tamara Klinger and I am an 8th grade student and I live on a farm near Sedley, Saskatchewan.

For about seven years, we have had Great Horned Owls nesting on our farm, in very good view of my bedroom window. I have watched them closely almost every day, which has been a wonderful experience.

After roughly the first four years of nesting, the family moved to a second nest, one still easily seen. There they lived quite happily until the year before last, 1980, when the nest became so dilapidated that one chick fell out onto a branch below, when the side of the nest fell down. The mother owl had to fly down there every day and feed it.

The next year, having learnt their lesson, the whole troop (by now there were quite a lot of them), moved over to our neighbours to nest. A few times they returned to perch in our garden, but never in that nest.

This year, I was shocked to see one of the dumb 1980 owls nesting in our old dilapidated nest! I know it's her; when you watch them grow up, you can tell them apart later. You wouldn't think she would be so dumb, after seeing

Great Horned Owl on nest

Gary Seib

her brother fall out of that nest. When it happened, she stayed pressed against the opposite edge of the nest for days. She wouldn't even go to the middle of the nest — but here she is again! Furthermore, the nest is now even more dilapidated, with only half its sticks left; but I know she layed her eggs there. She won't leave the nest to eat, or fly, more than once a day, unless you come within two feet of the tree.

The owl chicks that hatch there this year will have to have claws of Crazy Glue to stay on the nest.

Since hawks build the nests that owls use, and since humans are smarter than hawks, I wondered whether someone could come to repair this nest. The nest is only about five meters above the ground.

We desperately want to keep this owl family here, because unless they are here, all our corn gets eaten by other birds. When an owl is here, it scares those birds away.

Often we hear the owls hoot strange melodies, like chants. Once before a gigantic storm, we saw them gather and dance, with their wings outstretched, on a field. Sometimes at night the owls walk across our roof.

• • • • • • • • • • •

What kind (species) of owl is Tamara referring to?
Do they build their own nests?
Are the owls useful?

• • • • • • • • • • •

And here is what Stuart Houston had to suggest: "You and your Dad or friends should be able to arrange a salvage operation yourselves. All you need is a wooden box or metal tub, which can be fastened into a fork of a tree five or more feet above the ground, out of the reach of coyotes. Fill it full of sticks and place the young owls in it, and the mother owl will move to the new site and begin feeding and sheltering them at once. We've never had it fail.

• • • • • • • • • • •

Thanks again for writing, and thanks for your interest in owls. Not everyone is clever enough to realize that owls have their good points, and have their place in nature's scheme of things."

I hope that this suggestion will be useful for many of you who may see the need for repairing an owl nest.

• • • • • • • • • • •

On the other hand, the need for repair did not seem as urgent as first thought. Here is what Tamara wrote back: ". . . By the time Stuart Houston's letter came with instructions on what to do, one chick had flown and the other was practising flying . . . Thank you for caring about the owls."

• • • • • • • • • • •

Great Horned Owls are only 1 of 11 (!) regular species of owls present in Saskatchewan. They are the ones we see and hear the most often as they nest near where we live, in our farmyards and aspen bluffs, as well as in the northern forest. Other owls nest in southern Saskatchewan. Which ones nest in the prairie? (2 species) . . . in bluffs, farmyards and coulees? (3 species).

BIRD IDENTIFICATION

The birds in the photographs in the September issue were as follows: 1. Mallard, 2. Canada Goose, 3. Red-Winged Blackbird, 4. House Sparrow, 5. American Robin, 6. Mourning Dove, 7. Kildeer, 8. American Coot, 9. Lesser Scaup, 10. Sharp-tailed Grouse.

We unfortunately did not get any class entry but our winner for the individual entries is: Warren Anderson, Box 113, Perdue, Saskatchewan. Warren is 11 years old and is in grade 6 at Perdue School. His identifications are all good except No. 9, which he identified as a Canvasback. He still wins a guide to bird identification. Congratulations, Warren, and I hope that you will keep up your interest in birds. — *Paule B. Hjertaas*, 919 Cook Cres., Regina, Saskatchewan. S4X 2L9.

NATURE LIBRARY

BIRDS OF OAK HAMMOCK MARSH WILDLIFE MANAGEMENT AREA

KENNETH A. GARDNER. 1981. 172 pp. Paper $10.50.

Kenneth Gardner's *Birds of Oak Hammock Marsh Wildlife Management Area* is more than an annotated list of birds, it is a success story. In an age when the loss of wildlife habitat on the Prairies is occurring at a disconcerting rate, the reversal of this trend in even the smallest of areas could be termed a victory. The story of Oak Hammock Marsh is no less than a resounding triumph, for 3,500 acres of wetlands have been restored.

Oak Hammock Marsh lies 25 kilometres north of the city of Winnipeg, Manitoba. Once a part of the larger St. Andrew's Bog, it was gradually drained until only remnants remained. In 1967 a restoration project began under the cooperation of Federal and Provincial government agencies and Ducks Unlimited Canada. Actual construction began in 1972 and by 1974 the project was essentially complete. The site consists of 20 kilometres of dykes and 58 nesting islands. Water levels are controlled by a system of cross dykes, flood gates and drainage ditches. In the event of a drought, water levels can be augmented by eight artesian wells.

The restoration has had a profound impact on the avifauna of the area; and Gardner has done an excellent job in documenting these changes. For each species affected by the restoration he gives in the species accounts pre and post-restoration status summaries. In the section entitled "The Birds" he presents a before and after comparison of the numbers of each species o breeding bird recorded on early morning walks around the marsh in 1972 and 1974. Unfortunately these results are not statistically comparable as they are not corrected for observer effort. Nevertheless the changes in the species composition are quite evident: 15 species recorded in 1972 were not recorded in 1974, while 35 species recorded in 1974 were not recorded in 1972, a net gain of 20 species.

Another excellent feature of the species accounts is that for many of 265 species recorded in the study area, comparisons are made to the adjacent region. This adjacent region includes Gardner's hometown of Stonewall and includes 34 species not recorded in the study area. For the rarer species comparisons are made with the status of that species in southern Manitoba as a whole. The species accounts also include migration dates, maximum seasonal counts and summaries of nesting records.

This book is handsomely illustrated with 32 colour and six black and white photographs. Three maps pinpoint the study area, and show the geographic features of the study area and adjacent region. Remarkably free of errors of any kind. Gardner's book is a must for any serious student of prairie ornithology. — Reviewed by *A. R. Smith*, 308-537 4th Avenue North, Saskatoon, Saskatchewan. S7K 2M6.

THE FRESHWATER MOLLUSCS OF CANADA

ARTHUR H. CLARKE. 1981. National Museum of Natural Sciences, National Museums of Canada, Ottawa. 448 pp. Illus. Maps. Cloth $39.95.

How many of you have walked along a lake shore or a dried prairie slough with the crunch of snail shells under foot? Bending down to pick up a snail shell you muse over the fact that it has a delicate twist to the shell, then put the shell back down again none the wiser.

I think this textbook by Mr. Clarke could answer a lot of your questions. It is an informative text with introduction, a discussion of how to collect shells, classification, distribution and identification of snails (Gastropoda) or clams and mussels (Pelecypoda).

The introductory pages discuss why people collect shells, how one would collect shells, the tools and equipment necessary, arrangement of the collection in taxonomic order, and distribution of the molluscs in Canada with a brief discussion of the zoographic regions of Canada and the regions' geological history.

The identification key in the text is at the family level. Common English terminology is used to identify features which separate the families. Labeled schematic diagrams of features required to identify snails and clams are found on the inside covers.

The species covered in the text are in taxonomic order with the Latin and common names, description, distribution, ecology, a plate of the shell in 2/3 life size and a map of Canada illustrating distribution. Separating the text of gastropoda and pelecypoda are nine pages of colour plates of clam shells beneficial in identification.

The textbook is useful to the naturalist and professional alike. It has technical value with a glossary, description of terminology, bibliography and suggested reading for more information on particular classes of mussels as well as the diagramatic sketches of the mussel shell and the snail shell. A map of Canada denotes the zoographic regions. It is not only useful for the researcher in the laboratory identifying the summer's collection but the naturalist who can now not only muse over the shell but actually say they had looked at a particular species. This textbook has a definite place on the book shelf beside guides to the birds, mammals and freshwater fish of Canada as the identification authority of the mussels, clams and snails of Canada. — Reviewed by *Ron Jensen*, 1027 King Cres., Saskatoon, Saskatchewan. S7K 0N9.

THE LAKE ATHABASCA SAND DUNES OF NORTHERN SASKATCHEWAN AND ALBERTA, CANADA.
1. THE LAND AND VEGETATION.

HUGH M. RAUP and GEORGE W. ARGUS. Publications in Botany, No. 12, National Museum of Natural Sciences, Ottawa, 1982. 96 pp. Free.

Hugh Raup of Harvard University pioneered studies of the now famous Lake Athabasca sand dunes, first collecting plants in the area in 1935 when his wife Lucy — a lichen specialist — accompanied him. Later field work of a related nature was carried out between 1962 and 1975 by George Argus, a one-time student of Raup's and for many years the plant taxonomist at the University of Saskatchewan. Collaboration of the two has produced this landmark ecological study whose chief aim is to piece together the post-glacial history and to interpret the biogeography of the active dune fields.

Time will tell how successful the authors have been, for they readily admit in the introduction that present information is incomplete. What they have certainly accomplished is a challenging interpretation of the terrain, one that is bound to fulfill their "hope that it will stimulate further and more sophisticated study".

About half the paper is devoted to the development of the different dune forms, the slacks and gravel pavements, and the remainder to the vegetation, flora, and the ecological adaptations by means of which the plants cope with the shifting substratum. Appended are the botanical names of all plants collected on the south shore of Lake Athabasca, a useful checklist for the student and visitor.

The appearance of the paper is opportune, adding further evidence of the uniqueness of the dunes area at a time when plans for a hydro-electric megaproject on the Slave River presage changes in the hydrologic regime of Lake Athabasca and its south shore. The authors do not make a pitch for preserving this exceptional area; they do not have to, for their descriptions of the dunes and endemic plants plus the excellent black and white pictures of the terrain are sufficiently convincing.

A second paper is promised; it will catalogue the flora, and will consider its geography as well as the nature and origin of the botanical endeavours in the Lake Athabasca region. This will be an important supplement and I hope that we do not have to wait long for it. Meanwhile those interested in the natural history and ecology of the north will find "The Land and Vegetation" both informative and stimulating. — Reviewed by *J. Stan Rowe*, Crop Science and Plant Ecology, University of Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0.

SPRUCE WOODS PROVINCIAL PARK

MANITOBA DEPARTMENT OF NATURAL RESOURCES, Parks Branch, Winnipeg, Manitoba. February 1982. Paper $2.50.

If any one place in settled Manitoba can be said to have a special "genius loci" — a spirit of place — it must surely be the Carberry Sandhills, for this undulating savanna island in a sea of farmland nourished the imagination and land love of Ernest Thompson Seton, Norman and Stuart Criddle, and Ralph Bird. Today NATO army units are shredding the western part, including most of the open dune Bald Head Hills, and only the eastern third enjoys some protected status as the Spruce Woods Provincial Park. To lure visitors to it throughout the year the provincial Parks Branch has produced this colourful brochure.

Those intending to explore the Spruce Woods will find it an excellent introduction. Briefly described are the glacial and post-glacial processes that shaped the area, the earliest Indian visitors (a Clovis spear point has been found), the history of the later Indians and of the fur traders, and the settlement period when steamboats plied the Assiniboine River. Then follow short sections by seasons on natural features — plants, animals, marshes, dunes — illustrated with good quality colour pictures and exceptional pen-and-ink sketches by J. Carson.

Only a few things may jar the reader's sensibilities. The least of these is the statement that "Epinette" means "Pine" in translation; in fact it means "Spruce", so the English not the French Canadians were the bad botanists (and bad translators) when they changed the name of the stream to Pine Creek and called the settlement Pine Fort. The worst is the warning that those exploring the Bald Head Hills must risk unexploded shells. Perhaps the anonymous authors were subtly expressing their sense of our insane human world where, on side-by-side pages, a slender and fragile Great Blue Heron with a worried yellow eye faces the gun muzzle of a West German tank, both together in the beautiful Carberry Hills. — Reviewed by *J. Stan Rowe*, Crop Science and Plant Ecology, University of Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0.

WHY BIG FIERCE ANIMALS ARE RARE: AN ECOLOGIST'S PERSPECTIVE

PAUL A. COLINVAUX. 1978. Princeton University Press, Princeton, New Jersey. Paper $4.95.

Paul Colinvaux writes unusually well for a scientist — not provocatively, but cogently. His essays are models of scientific explanation. For anyone who has felt lost in the labyrinth of information usually presented in an ecology textbook, Colinvaux's book will offer a refreshing 'read.' He does not report information to the third decimal place; he summarizes, clarifies and interprets the major findings of ecology and their relevance for understanding the workings of our environment.

I especially enjoyed his explanations of why plants are so inefficient, what causes treeline in the Arctic, what territoriality means and does not mean — especially for birds, and what causes stability in natural ecosystems. On the other hand, I found his defence of fertilizing lakes less than convincing and a curious blind spot in an otherwise clear sighted book.

Colinvaux also knows how to weave into his essays an interesting anecdote, whether he is describing Charles Elton following arctic foxes across the barrens of Spitzbergen or Nelson Transeau in his armchair meditations about Illinois cornfields. It is encouraging to see a scientist muse over how the major findings of his science are explained and presented, and Colinvaux certainly does this.

The book was first published in 1978, but it is now available in an inexpensive paperback edition. If you are looking for a refreshing rehash of some of the major principles of ecology, I am sure you will enjoy this book. — Reviewed by *J. David Henry*, Box 263, Waskesiu Lake, Saskatchewan. S0J 2Y0.

AN ATLAS OF THE BIRDS OF THE WESTERN PALEARCTIC

COLIN HARRISON. 1982. Princeton University Press, Princeton, New Jersey. 322 pp., illus. Cloth $40.00 (Can.).

This is a book of 673 maps showing the distribution of 806 species of birds, primarily in the western Palearctic which as defined includes Europe, North Africa and the Middle East. (The Palearctic Region includes the part of the Old World which lay under Arctic conditions during the last glaciation, only a small area of which was actually ice-covered.)

The maps come in two sizes: 556 are 60 cm (under 2.5 in.) square and cover the area of primary concern, including eastern Greenland. The remainder are 130 x 60 cm (5 x 2.5 in.) and stretch eastward across Asia. For the western Palearctic, breeding, winter and migration ranges are shown, for elsewhere only breeding ranges. A text of less than 150 words accompanying each map gives status, nest sites and thermal, altitudinal and habitat distributions. Each family and, often, genus is preceded by text that covers characteristics of distribution common to the group. A small black and white drawing of each species is included.

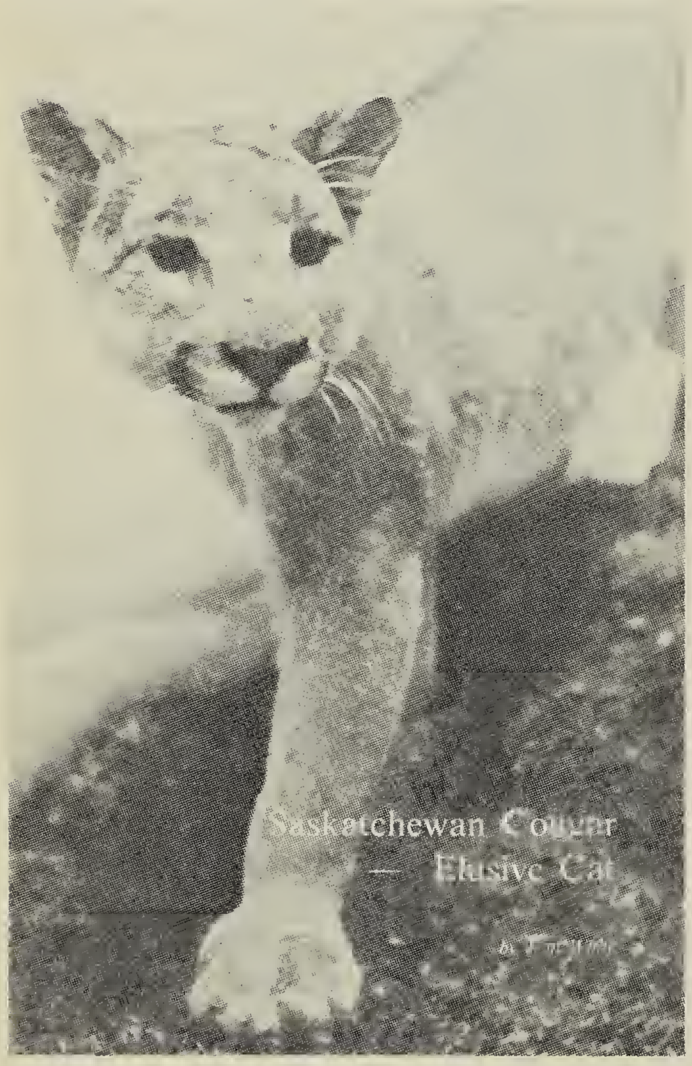
While it goes into more detail on distribution than the much less expensive field guides available for the area (as listed below), its main advantage appears to be that the boundaries of countries are given. This permits a tally to be made of the species likely to be seen in any area of interest.

BRUUN, BERTEL, and ARTHUR SINGER 1970. Birds of Europe. McGraw-Hil Book Co., New York. 319 pp.

HEINZEL, HERMAN, R. S. R. FITTER an J. L. F. PARSLOW. 1974. The birds o Britain and Europe with North Afric and the Middle East. Collins, London .332 pp.

PETERSON, R. T., GUY MOUNTFORT and P. A. D. HOLLOM. 1974. A field guide to the birds of Britain and Europe. Collins, London. 344 pp.

— Reviewed by *Bernard Gollop*, 115 Perimeter Rd., Saskatoon, Saskatchewan. S7N 0X4.



SASKATCHEWAN COUGAR — ELUSIVE CAT

by Tom White.
Saskatchewan Natural History Society Special Publication No. 14.
Price $5.00.
Available December 1 from the Blue Jay Bookshop, Box 1121, Regina, Sask. S4P 3B4

LETTERS

PARTRIDGES

Did you ever try to do bird calls? I did, and it was fun, before I got my false teeth.

My favourite one was that of the partridge. I still recall the years when we lived in a cottage seven miles west of Yorkton.

For no particular reason one fall, I gave the call of the partridge, while standing outside in the sheltered corner of an L-shaped house. Almost immediately, two of them came to within four inches of my face and stared into my eyes. I just stood there petrified. The poor birds, perhaps thinking I was the damedest-looking bird they ever saw (or had I swallowed a friend of theirs?), reversed and flew away.

Years later, when we lived on another farm near Hyas, I just loved to go all alone into the woods. Once, when I stood listening in silence, I noticed a length of old rotten log on the ground. On it were four partridges breast-down, and their heads over each other very close together. Then one and then another flapped the log with their wings, the two beginning to drum in rhythm together. Everyone in Saskatchewan has heard the partridge drumming, but how many have seen the drum band at work?

Partridges are my favourite bird. I liked to have them close by in the trees, and I never thought of shooting any. But, for a change from the salt pork in the early days, I would go out and shoot enough sharp-tailed grouse to make a stew.

I am the mother of Lindsay and Bill Wotherspoon, who banded birds at Hyas in the 1930's. I am 95 years of age and no longer able to see one word I write, so I hope you can make it out. — *Mrs. Florence Wotherspoon*, 13 Kusch Crescent, Saskatoon, Saskatchewan. S7L 3T4.

EDITOR'S NOTE: Mrs. Wotherspoon's partridge is the Ruffed Grouse.

JUNE GEESE

The following event witnessed by myself may be of some interest.

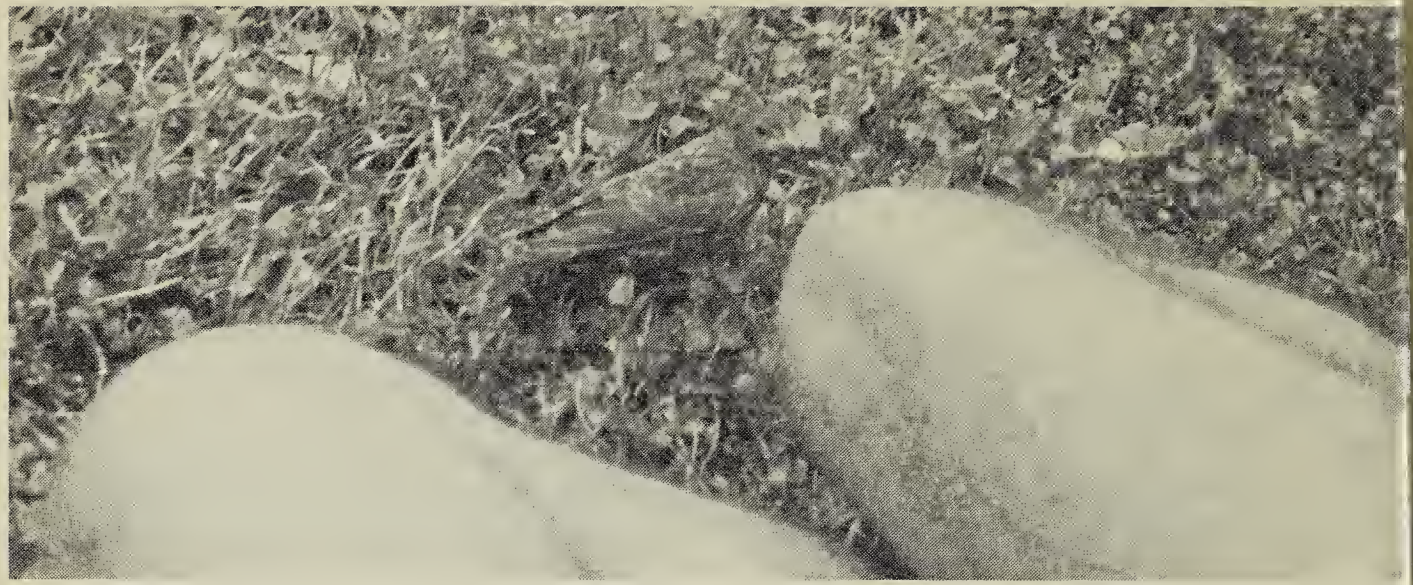
While at Piprell Lake about noon of 20 June 1982, I heard the sound of a flight of geese. The fact that there were at least 300 in the flock, in lop-sided V formation, at about 1000' above ground level, and flying almost due north, seemed a bit odd to me, at this time of year. — *W. Earl Dodds*, R.R. 5, Site 17, Prince Albert, Saskatchewan. S6V 5R3

EDITOR'S NOTE: Canada Geese are known to migrate north in June presumably to moulting areas in the Arctic. — W. Harris.

FEARLESS COWBIRD

We were interested to read the contribution by Bradley Muir, entitled "Tuned In and Tuned On," in your June 1982 issue, regarding the friendly, fearless behaviour of a Brown-headed Cowbird in Prince Albert National Park.

The previous week, on 29 June, my



Brown-headed Cowbird beside human *Peter B. Watkin*

wife and I were working in our vegetable garden near Sundre, Alberta. Our property is located adjacent to the Red Deer River, and is mostly covered with spruce and aspen, except for about half an acre we have cleared for our garden. It is a naturalist's delight, for we have a family of Eastern Phoebes that has returned to us for eight consecutive years; Common Mergansers nest beside our stream; a Pileated Woodpecker can be seen from time to time; we can watch a Ruffed Grouse "drumming" on his log, fifty yards from our cabin, and can get within fifteen feet of him; Blue Jays, Canada Jays and robins abound, and hummingbirds hover in front of our cabin during July and August. And, of course, the wild flowers abound, moose, deer, coyotes, and the occasional bear visit us throughout the year. But 29 June 1982 was a first for us.

While we were hoeing weeds, and trying to spare our rows of vegetables, a little thrush-like bird joined us, and like Mr. Muir's cowbird, showed no fear. It hopped around our feet, grubbing amongst the vegetation and seemed to want to be near us. I had our enormous German Shepherd with me, under control, and he was fascinated by this strange visitor. The real test of the dog's will power came when the bird hopped onto his tail!

We too thought this bird might be injured, but after a while he flew strongly to a nearby spruce tree.

Later in the afternoon, four young robins were searching for worms in an open space beside our garden. The little cowbird soon joined them, for company, and although the baby robins gave him a dirty look or two he was quite happy hopping along beside them. Then Mother and Father robin arrived on the scene, took one look at this intruder from the wrong side of the tracks, decided a cowbird was not proper company for cultured robins, and shooed it away using the most disgraceful language!

The little cowbird flew away with feelings and feathers somewhat ruffled, for after all it was only trying to be friendly. Then it spotted us in the garden, decided that we were more sociable, and joined us in our minor agricultural exercise. The enclosed photos show how brave it was, and perhaps help you to confirm our preliminary identification — is it a young, Brown-headed Cowbird?

Whatever it is, we hope it enjoyed our company as much as we enjoyed its, and also hope it will continue to visit us, and not fall a victim to its own curiosity and friendliness — *Peter B. Watkins*, 3406 - 11 Street S.W., Calgary, Alberta T2T 3M1

SOCIETY NEWS

Presentation of Larry Morgotch award to Sheina Wait

SNHS AWARDS 1982

Awards were presented at the Annual Meeting in Moose Jaw on 16 October.

The Conservation Award was presented to Ducks Unlimited (Canada) for its work towards the preservation of prairie wetlands. The award was presented to the president, Dr. Herb Cowburn of Saskatoon.

The Larry Morgotch Memorial Award for excellence in photography was presented to Sheina Wait of Moose Jaw for the series of slides she presented at the members slides on 15 October.

The Cliff Shaw Award is annually presented for an article published in Blue Jay. It has been presented for first publications of younger members, and for quality of articles or numerous and varied contributions. This year it was presented to a young contributor who sent in a photograph and a short letter to accompany it. It was the story that was told by Eric Feilburg's photograph that earned him the Cliff Shaw Award to take to his home in East Braintree, Manitoba.

LETTER TO ENVIRONMENT CANADA

Ms. Gail Turner
Information Directorate
Environment Canada
Ottawa, Ontario. K1A 0H3

Dear Ms. Turner:

I represented the Saskatchewan Natural History Society at the DOE Headquarters First Annual Public Consultation Meeting, September 21-23, 1982. I also attended the regional meeting held in Regina on September 19. Attached to this letter is my rather general report to SNHS. The Society wishes to congratulate Environment Canada for the development of long-range plans and for the resolve to consult with public interest groups before the annual updating of those plans. The Society also wishes to express appreciation for the payment of air fare for one delegate to the Ottawa meeting.

In preparation for the first public consultation meeting I studied Environment Canada's 1982 Strategic Plan. As a naturalist my conclusion is that the future holds little hope for environment in Canada. Apparently Canadians are expected to live in a consumer society with ever increasing GNP and energy growth. As naturalists we would like DOE to plan for a conserver society.

DOE employees attended the meeting and they listened to the delegates of the public interest groups and they tried to answer our questions. My conclusion is that they are conscientious environmentalists and that is just not good enough. As environmentalists they plan to manage and to change the environment for the economic growth of man. They are quite prepared to reduce the quality of the environment. As naturalists we would like DOE employees to reflect a greater understanding of ecosystems. Man is after all only one organism in the biosphere and he is completely dependent on the continued existence of a healthy natural environment. DOE should, in our opinion, place less emphasis on managing and changing the environment for an easier richer life for man and far more on the rights of other organisms of our natural ecosystems. We recognize the right of man to use some of the earth's renewable resources but we oppose the complete destruction of natural ecosystems and the elimination of species.

As a life-long resident of the prairies I would have attended a study session considering the long-term future of healthy grassland ecosystems in Canada. However, there was no such session. Forestry does bring billions of dollars into Canada but so does Agriculture and from a much smaller area of land. Clearly there is a perennial conflict between exploitation and preservation. Among employees of the forestry branch of DOE I found some awareness of the need to maintain the naturalness and the species diversity of our forests. I wish that DOE had some influence in preservation of our fragile grassland ecosystems and the fertility of our farm soils.

I attended the national parks session because SNHS members have for twenty years worked for the preservation of some grassland ecosystems by Parks Canada. Our objective was to have something of our grassland heritage preserved. In every National Park preservation should, but does not always, have top priority. This means that the activities and the numbers of humans must be controlled. It also means that man must carefully study the ecosystems contained within each park and must monitor changes taking place and then must manage and control disturbances or pest species which have somehow been introduced.

There are many other comments which I would like to make but as a delegate to the Ottawa meeting I am expecting a detailed questionnaire and I will give it prompt and careful attention. The opinions I express are my own but as one of the founding members of SNHS in 1948 and as editor of our natural history journal for more than twelve years I think that the same ideas are held by many members of our society. — *G. F. Ledingham*, Dept. of Biology, University of Regina, Regina, Saskatchewan. S4S 0A2

SASKATCHEWAN NATURAL HISTORY SOCIETY

Financial Statement — Year Ending September 30, 1982

INCOME

Memberships (including sales of Blue Jay)		14,227.48	
Memberships (extra re: sustaining and patron)		2,090.00	16,317.48
Spec. Pub. No. 1 Guide to Sask. Mammals	Out of print		
Spec. Pub. No. 2 Birds of Sask. River	Out of print		
Spec. Pub. No. 3 Birds of Regina	Out of print		
Spec. Pub. No. 4 Blue Jay Index (1942-60)	6.00		
Spec. Pub. No. 5 Birds of Lake Athabasca	2.50		
Spec. Pub. No. 6 Birds of N.E. Sask.	14.40		
Spec. Pub. No. 7 Birds of Moose Mountain	16.40		
Spec. Pub. No. 8 Blue Jay Index (1961-69)	6.00		
Spec. Pub. No. 9 Birds of Rosetown-Biggar	37.81		
Spec. Pub. No. 10 Birds of Gainsborough-Lyleton	49.24		
Spec. Pub. No. 11 Blue Jay Index (1970-78)	46.45		
Spec. Pub. No. 12 Birds of Regina (1980 revision)	210.35		
Spec. Pub. No. 13 Birds of the Qu'Appelle (1857-1979)	227.57		
Publication Hours and the Birds	Out of print		
Publication Birds of the Elbow	2.71	619.43	
Saskatchewan Government Grants		4,000.00	
Donations — General		2,047.00	
Interest (Savings account, bonds and term deposits)		3,359.67	
Bonus on $5,000 matured Canada Savings bonds		1,385.00	
Summer Meeting 1982		247.47	
Profit on excursion to Churchill		400.00	
Miscellaneous (Premium re: U.S. funds)		155.29	
Sales from Blue Jay Bookshop	26,841.87		
Less: Cost of sales	19,692.54		
Gross profit (26.6% of sales)	7,149.33		
Less: Postage, supplies, etc.	859.53		
Honoraria	2,515.92		
Net Profit (14.1% of sales)		3,773.88	15,987.74
			32,305.22

EXPENSE

Printing of Blue Jay (4 issues)	16,686.43	
Printing of Newsletter (3 issues)	2,712.94	
Honoraria (650, 250, 500, 30)	1,430.00	
Postage	1,399.81	
Office supplies and stationery	224.46	
Office equipment (address plates)	208.92	
Misc. office and admin. expense	516.45	
Annual meeting 1981	134.36	
Delegates expense	148.80	23,462.17
EXCESS OF INCOME OVER EXPENDITURE		8,843.05

Statement of Assets and Liabilities at September 30, 1982

ASSETS

Cash on hand (Bookshop)		40.00
Cash in bank (chequing) — SNHS	8,091.11	
— Bookshop	3,948.90	
Cash in bank (savings) — SNHS	3,760.29	
Cash in bank (term deposits) — SNHS	18,641.90	34,442.20
Stock on hand (Bookshop)		6,156.73
Accounts receivable (937.27 less prepaid orders 181.10)		756.17
Deferred expense (editing and typing) for publication "The Cougar"		630.60
Deposits with Postal Dept.		65.86
Suspense account		83.03
		42,174.61

LIABILITIES

Trust fund re: Sanctuaries and Conservation areas				
Balance at September 30, 1981			2,108.19	
Less costs of nesting platforms			77.14	
			2,031.05	
Less costs of Big Gully sanctuary				
Rental lease May/82 to May/83		1,200.00		
Municipal taxes 1982		329.30		
		1,529.30		
Less donations		693.00	836.30	1,194.75
Contributions received and to be forwarded re:				
Heritage Marshes and Conservation areas		3,610.00		
Less costs: Certificates	702.72			
Raffle tickets	193.67			
Deer feeders	400.00	1,296.39	2,313.61	
Tropical rain forests appeal			205.00	2,518.61
Donations in support of special publications				2,050.00
Donation in support of publication "The Cougar"				200.00
Donation for colour pages in the "Blue Jay"				500.00
Owing re: Honoraria (Bookshop)				3,159.00
Owing re: Education Tax				32.09
NET WORTH				
Balance at September 30, 1981			23,677.11	
Plus surplus for year ending September 30, 1982			8,843.05	32,520.16
				42,174.61

Hoarfrost *J. B. Gollop*

BLUE JAY SUBSCRIPTION AND SNHS RENEWAL FORM

Regular membership (including institutions)	$10.0
Sustaining membership	20.0
Patrons	30.0
Junior Club Members and Senior Citizens	5.0

Any amount in excess of $10.00 is creditable as an income tax deduction an receipts for the excess amount will be mailed upon request. ☐ Income tax receip required.

Bulk subscriptions to schools and to organized junior naturalist groups will be $10.00 for the first subscription and $5.00 for each additional subscription to the same address (minimum of 5 subscriptions).

No further *Blue Jays* will be mailed to members in arrears.

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